NOMINALS AS COMPLEMENTS

By

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The syntactic construction known as the _derived nominal_
presents problems to a transformational grammar of English.
Noam Chomsky has claimed that derived nominals have
restricted productivity, an internal structure like that of
noun phrases, and idiosyncratic semantic relationships to
their associated predicates. Chomsky's claim that the Lexi-
cal Hypothesis provides a better explanation of the charac-
teristics of derived nominals than the transformational pos-
ition is rejected. A predicate-initial analysis of the
underlying structure of English and an analysis of derived
nominals as complements of nouns in underlying structure are
adopted. It is then shown that the productivity of derived
nominals is not as restricted as Chomsky claims, and that
the remaining restrictions are due to the failure of cer-
tain rules to apply in the derivation of derived nominals.

Frederick Newmeyer's proposal that such rules fail to apply because DERIVED NOMINALIZATION applies before they do, and nominalizes the predicate which is a part of the structural description of those rules, is adopted. It is then argued that the same rule-ordering arguments that account for the restrictions on productivity of derived nominals will also account for the noun phrase-like internal structure of derived nominals. It is further argued that the predicate-initial analysis eliminates the need for any rule of extraposition in English, that DERIVED NOMINALIZATION is a cyclic rule, and that the formation of complements from underlying embedded sentences in general is a process of the cycle applying to the embedded sentence, and not of some higher application of the cycle.

CHAPTER ONE
INTRODUCTION

Statement of Purpose

The question of the extent of regularity in language
has been a recurrent theme in linguistics since ancient
times, when the Analogists of Alexandria disputed with the
Anomalists of Pergamon. This question has recently become
once more prominent in the study of transformational gram-
mar. In an important sense, a transformation is an abstrac-
tion of a regularity in language. The question of whether a
particular structure in a language can be described trans-
formationally is an empirical one, and is equivalent to the
question of whether that structure in that language exhibits
a regular correspondence to another structure of that lan-
guage. An assumption of transformational grammar has been
that language is basically regular, and, as a consequence,
transformational grammars have emphasized the regularity of
a language.

Noam Chomsky (1970) has claimed that the English comple-
ment construction which he calls the derived nominal consti-
tutes a part of English grammar which is not regular in the
sense indicated above, and which cannot be described trans-
formationally. He supports his claim by contrasting derived
nominals to gerundive nominals, another type of complement

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which he considers to be derived by transformations from underlying embedded sentences. This is an empirical claim, and may be tested by examining the sentences of English which contain these two types of complements. The forms of these complements, and their relation to each other and to sentences, is illustrated in 1.1, 1.2 and 1.3; the main clauses in 1.1 having the corresponding gerundive nominals in 1.2 and derived nominals in 1.3.[1]

1.1a) John is usually calm under stress, <u>which pleases Mary</u>.
  b) John completed the assignment early, <u>which pleased Mary</u>.

1.2a) John's usually being calm under stress <u>pleases Mary</u>.
  b) John's completing the assignment early <u>pleased Mary</u>.

1.3a) John's usual calmness under stress <u>pleases Mary</u>.
  b) John's early completion of the assignment <u>pleased Mary</u>.

The underlined words are intended to supply appropriate contexts for the nominal complements as well as showing how sentences and nominal complements can be alternate realizations of a common underlying structure. Gerundive nominal complements often resemble sentences with progressive aspect. While this may be confusing at times, the intended reading of such forms as gerundive nominal complements may be made clear by putting them into a context such as ...<u>is surprising</u>, or <u>Ann is worried about</u>....

Chomsky's argument that derived nominal complements are not regular, and cannot be derived from underlying embedded sentences, as are gerundive nominal complements, is based on

three characteristic properties; A, that productivity is more restricted for derived nominal complements than for gerundive nominal complements, B, that semantic relations between derived nominals and their associated propositions are varied and idiosyncratic, and C, that derived nominal complements have the internal structure of noun phrases. Having concluded that derived nominal complements cannot be derived transformationally, Chomsky claims that the phrase structure rules of English must be complicated to provide the structure of derived nominal complements directly and that derived nominals are lexical entries. This is the Lexical Hypothesis, and amounts to a claim that derived nominal complements show less regularity than other structures in English, and the limits of regularity have been found for this part of the grammar of English. If Chomsky is wrong about the implications of the properties of derived nominal complements, then his argument for the need for the Lexical Hypothesis is weakened. I propose to show that Chomsky's three properties do not establish the irregularity of the formation of derived nominal complements, that their formation is as regular as other transformational processes, and that a transformational account of derived nominal complements is at least as well motivated as the Lexical Hypothesis.

The Lexical Hypothesis

Chomsky (1970:188) states the lexicalist position as the choice of extending the base rules, with concomitant

simplification of the transformational component. By contrast, he gives the transformationalist position as the choice of simplifying the base structure and extending the transformational apparatus. Chomsky states that the choice between the two positions is entirely an empirical one. Chomsky's 1970 study is a presentation of arguments for the validity of the lexicalist position. I will consider those arguments at appropriate points below, but for now I will give a summary of the Lexical Hypothesis as presented by Chomsky.

The theory within which Chomsky is making his claims about derived nominals pictures syntax as being strictly divided between a base component and a transformational component (the "Aspects" model: cf. Katz and Postal, 1964, and Chomsky, 1965). The point of connection between the two components, when all the base (phrase-structure) rules have applied, but before any transformational rules have applied, is called <u>deep structure</u>. A third component is the lexicon, which supplies lexical items to be inserted in, and only in, deep structure.

The Lexical Hypothesis involves the claim that derived nominal complements are produced directly by a subset of the base rules, that derived nominals are supplied directly from the lexicon in deep structure, and that derived nominal complements are not subject to most transformational rules. Chomsky (1970:195) notes that such a claim implies that phrase structure rules must introduce an extensive range of

derived nominal complement structures parallel to the structures of embedded sentences. Indeed, there seem to be few, if any, sentential deep structures in Chomsky's system which do not have corresponding derived nominal complements.

According to Chomsky (1970:190), in early transformational theory, "there was no other way to express the fact that the contexts in which _refuse_ appears as a verb and _refusal_ as a noun are closely related" than in terms of transformational rules. Chomsky further states that when contextual features were introduced into the theory (in Chomsky, 1965), it became possible to separate the lexicon from the categorical component of the base, and thus to adopt the Lexical Hypothesis. According to Chomsky (1970: 190), _refuse_ is entered in the lexicon with certain features specified, but with no specification of the categorical features [noun] and [verb]. He adds that fairly idiosyncratic morphological rules would be involved in deriving forms like _refusal_ in derived nominal complements.

Derived Nominals as Complements on Nouns

The term _complement_ has been used in ways different enough to make it worth while indicating here what I mean by _gerundive nominal complement_ and _derived nominal complement_. On the one hand, anything that completes a structure can be regarded as a complement. Thus, the underlined parts of the examples in 1.4 are all complements of the verbs in their respective sentences.

1.4a) John arrived <u>yesterday</u>.
  b) I want <u>to leave now</u>.
  c) Mike totaled <u>his car</u>.

On the other hand, <u>complement</u> has been used to refer to nominalized (or otherwise reduced) embedded sentences such as those cited in 1.2 and 1.3. By <u>nominal complement</u> I will refer to nominalized embedded sentences which are complements of nouns in noun phrases.

Peter Rosenbaum (1967) argued that the type of complement structure he called Noun Phrase Complementation is a noun phrase in deep structure, consisting of the pronoun <u>it</u> as the head noun, and an embedded sentence as a complement of <u>it</u>. Rosenbaum contrasted Noun Phrase Complementation with Verb Phrase Complementation, in which an embedded sentence is a complement of a verb in deep structure.

Rosenbaum's claim that the pronoun <u>it</u> is present in noun phrase complements in deep structure now appears to be wrong. I will present arguments against that claim in the section on <u>IT</u>-EXTRAPOSITION in Chapter Three.

Peter Menzel (1969) has argued that gerundive nominal complements (and, less explicitly, derived nominal complements) are complements of one of a certain set of deletable head nouns in underlying structure. He points out (pp. 77-81) that verbs which take gerundive nominal complements, with a few exceptions such as verbs of belief and <u>say</u>, <u>declare</u> and <u>claim</u>, also allow the construction Noun + Complement, or just the noun as object. The nouns which can appear in such constructions (i.e., <u>fact</u>, <u>proposition</u>, <u>event</u>,

action, etc.) may also be taken as names of the types of complements a verb allows. Thus, <u>John's coming</u> can be both a fact and an event, and we get the sets of possible sentences in 1.5 and 1.6.

1.5a) John's coming occurred at ten o'clock.
  b) The event of John's coming occurred at ten o'clock.
  c) The event occurred at ten o'clock.

1.6a) John's coming is surprising.
  b) The fact of John's coming is surprising.
  c) The fact is surprising.

The noun <u>action</u> can only take subjectless gerundive nominal complements, while other nouns, such as <u>event</u>, require a gerundive nominal complement with a subject (Menzel, 1969:82-83). At the same time, of the nouns which take gerundive nominal complements, only <u>action</u> allows a preposed possessive noun.[2] Thus, we find the pattern of acceptability shown in 1.7.

1.7a) the action of $\left\{ \begin{array}{l} \text{*John's eating the meat} \\ \text{eating the meat} \end{array} \right\}$
  b) the event of $\left\{ \begin{array}{l} \text{John's eating the meat} \\ \text{*eating the meat} \end{array} \right\}$
  c) John's $\left\{ \begin{array}{l} \text{action} \\ \text{*event} \end{array} \right\}$ of eating the meat

Most of the nouns on Menzel's list also take derived nominal complements, and any derived nominal complement, unless it is a complement of a verb of belief, or of <u>say</u>, <u>declare</u>, or <u>claim</u>, can be a complement of at least one of those head nouns, as is indicated by the examples in 1.8.

1.8a) The fact of John's departure cannot be contested.
  b) The event of the destruction of Jerusalem occurred in 67 AD.
  c) The state of Mike's awareness is unpredictable.

The head noun <u>action</u> never takes a derived nominal complement, no matter where the possessive agent is placed, or even if it is deleted. The examples in 1.9 are all unacceptable, even though the parallel forms in 1.10 are perfectly acceptable.

1.9a) *The action of Humphrey's refusal of the offer caused trouble.
  b) *Humphrey's action of refusal of the offer caused trouble.
  c) *The action of refusal of the offer caused trouble.

1.10a) The fact of Humphrey's refusal of the offer caused trouble.
   b) Humphrey's action of refusing the offer caused trouble.
   c) The action of refusing the offer caused trouble.

Menzel (1969:51) notes that gerundive nominal complements can also be complements of <u>act</u>. He states that acts are a subclass of actions, with the restriction that "an act is an action which the speaker either (a) disapproves of strongly (in a legal or moral sense); or (b) admires greatly." He also notes that this distinction does not seem to be recognized by some speakers.

While derived nominal complements do not occur as complements of <u>action</u>, a restricted class does occur as complements of <u>act</u>. The head noun <u>act</u> does not take derived nominal complements with object prepositional phrases. The examples in 1.11 illustrate the differences between gerundive nominal complements and derived nominal complements in

regard to the head nouns <u>action</u> and <u>act</u>. The adjective <u>cowardly</u> is more appropriate for the complements of <u>act</u>.

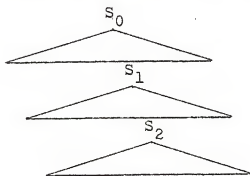1.11 (in the context ...<u>was unexpected/cowardly</u>.)

    a) John's denying the request
    b) John's action of denying the request
    c) John's act of denying the request
    d) John's denial of the request
    e) *John's action of denial of the request
    f) *John's act of denial of the request
    g) John's act of denial

Gerundive nominal complements and derived nominal complements are alike in that they both can be complements of a limited set of head nouns in surface structure, and seem to always be complements of such nouns in underlying structure. The two types of complement differ in that only gerundive nominal complements can be complements of <u>action</u>.

Some Assumptions

In this study I will be making certain assumptions bearing on the structures and rules I will discuss. First of all, I will assume that grammatical rules apply in a fixed order and cyclically. The cyclic application of rules means that the full set of rules would first apply in order to the deepest embedded sentence, S_2, in 1.12.
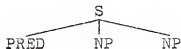
1.12

S_0

S_1

S_2

After all the rules have had a chance to apply to S_2, the rules would apply in the same order to the next higher sentence, S_1, which is in turn embedded in S_0. After all the rules have had a chance to apply to S_1, the rules would apply again in the same order to the highest sentence, S_0.[3]

I will also adopt here a predicate-initial analysis of the underlying structure of English sentences. McCawley (1970) presents arguments for such an analysis for structural representations comparable to those in Chomsky (1965). A predicate-initial analysis is also at least implicit in the case grammar of Fillmore (1968). The underlying structures in case grammar differ greatly from the underlying structures postulated in Chomsky (1965). In Fillmore's case grammar, the noun phrases in deeply underlying structures are identified by their semantic relationship to the predicate of the sentence, and not by any syntactic relationship. Without adopting case grammar *in toto*, I will assume that, before any syntactic rules have applied, there is no ordered relationship between the constituents of the underlying propositions, and that at least some syntactic rules must recognize semantic relationships and transform such semantic relationships into word-order syntactic relationships.[4] For convenience of representation, however, I will assume that underlying sentences have structures like that in 1.13 before any syntactic rule has applied.[5]

1.13

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              S
            / | \
        PRED  NP  NP
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Assuming predicate-initial order in structures such as
1.13 is a way of expressing the pivotal role of the predi-
cate in most syntactic rules. An alternative statement
could be that noun phrases are assigned linear order in rela-
tion to the predicate by syntactic rules.

McCawley (1970) explicitly assumes that underlying sen-
tences have the order Verb-Subject-Object (VSO) before the
application of any transformations, but does not present any
evidence for preferring that order over one of Verb-Object
-Subject (VOS). I believe that the evidence points to a VOS
order, if there is any order at all to the noun phrases to
the right of the predicate in deeply underlying structures.[6]
In the rest of this work, the relative order of noun phrases
in trees representing deeply underlying structures will be
arbitrary, and represent no claims as to the actual order.

<u>Outline</u>

This study is concerned primarily with the internal
structure of nominal complements, by which I mean the rela-
tionships of the constituents of nominal complements to each
other, as opposed to the relationships of nominal comple-
ments to items which are not constituents of the said nomi-
nal complements. I compare such internal structures to
those of sentences and of other clausal complements. I
point out that the differences between such structures are
regular, and easily accounted for by independently motivated
syntactic rules, given certain conditions on the cycle in
which the rules apply.

I do not discuss the problem of the apparent irregularities in the semantic relationship between related predicates and derived nominals. I will adopt Newmeyer's (1971) claim that, at the worst, the transformationalist position is no less adquate on this point than the Lexical Hypothesis, since, if there are no regularities, the information on restrictions on meanings of derived nominals must be part of the lexical entry: of the underlying predicate with the transformationalist position, of the underlying predicate/nominal with the Lexical Hypothesis.

Chapter Two is a discussion of the surface structure of derived nominal complements, and arguments for including in the class of derived nominal complements certain structures which have not previously been so identified. Chapter Three discusses the rules which do not apply in the derivation of derived nominal complements, or which have different conditions on applicability in derived nominal complements, but which apply without restriction to sentences and gerundive nominal complements. Chapter Four discusses the ordering of rules which will account for the structure of derived nominal complements, and the question of which cycle the appropriate rules apply on. Chapter Five summarizes the thesis, and presents certain questions of theoretical import.

[1] A source of possible confusion is the fact that both the nouns formed by adding a suffix to a verb stem, and the complements in which such nouns occur, can be called _nominals_. To avoid confusion, I will reserve the term _nominal_ for the nouns so formed, and refer to the complements they occur in as _nominal complements_. I will use _nominalization_ to refer to the process by which nominals are created. I will have more to say about the choice of the term _complement_ below.

[2] The possessive agent on _action_ is always identical with the deleted agent of the complement of _action_. Menzel argues that the agent cannot have been raised from the complement. Among suggestions of possible sources for the possessive agent, he states that "in a grammar based on the transformationalist position...the agent on the head noun _action_ would be derived from an underlying sentence embedded on the noun _action_, or more probably on the verb _act_." Ross (1972a) argues that sentences with verbs of action (which are the only sentences that can be embedded as complements of the head noun _action_) are embedded on the verb _do_ in underlying structures, with the agent of _do_ identical to the agent of the embedded sentence. The substitu-

tion of <u>action</u> for <u>do</u> in nominal complements, and the dele-
tion of the lower of two identical agents (cf. EQUI-NP-DELE-
TION in Chapter Three), will account for the above facts
within the transformationalist position.

[3] There are extensive arguments in the literature for
cyclical ordering. I am not concerned here with the argu-
ments over extrinsic vs. intrinsic ordering, but will merely
state that assuming ordering permits useful generalizations,
as in Chapter Four and Chapter Five.

[4] At this point I am rejecting the Aspects model of
grammar. The Aspects model has syntax as the most basic
component of the grammar, with both semantics and phonology
acting as interpretive components of the output of the syn-
tactic component. I believe that this model is unrealistic,
even as a model of competence rather than of performance.
Speech is a stream of sound perceived as a linear string of
distinct units. Semantic propositions, on the other hand,
are unordered in any dimensional sense. There is no dimen-
sional order implied in the statement that someone is the
agent of such-and-such action. Syntax, then, is that part
of grammar which relates unordered semantic relationships
to linearly ordered phonological strings.

[5] James McCawley, during a discussion at the 1972 LSA
Annual Meeting, summed up the predicate-initial hypothesis
in the statement that if there is any linear order so early
in the grammar, it is a predicate-initial order.

[6] I will present my arguments for this analysis in
Albury (forthcoming).

CHAPTER TWO
DEFINING DERIVED NOMINAL COMPLEMENTS

First Definitions

Chomsky (1970) does not explicitly define derived nominal complements, but a definition may be extracted from the various examples he cites in discussing the characteristics of derived nominals. It is obvious throughout that Chomsky intends the class of derived nominals to include only those nominals which are morphologically derived from a verb by means other than the suffix -ing.[1] He explicitly excludes gerunds (those nominals derived by adding -ing to a verb) from the set of derived nominals. Chomsky (1970:214) notes certain similarities to derived nominal complements shown by structures called "action nominals" in Lees (1963) and Fraser (1970), which have nominals formed with -ing, but he claims a number of differences which would seem to preclude treating them as derived nominal complements. I will have more to say about these forms below. Chomsky thus limits the term derived nominal to those nominals formed by adding a derivational suffix to a verb, such as refusal (from refuse) and marriage (from marry); nominals identical (except for stress) to verbs, such as search (from search) and éxport (from expórt); and nominals phonologically modified from a verb, such as deed (from did).

I will temporarily accept Chomsky's implied morphological definition of derived nominals, and define derived nominal complements as those complements in which nominals formed without an -ing suffix are found. Starting from this definition of derived nominal complements, I would like to build up a detailed description of the structure of these complements. Chomsky's method of comparing sentences, gerundive nominal complements and derived nominal complements to illustrate the characteristics of derived nominal complements is useful, and I will adopt it here.

The Surface Structure of Derived Nominal Complements

Chomsky (1970:187-88) cites the sentences in 2.1 as having the corresponding gerundive nominal complements in 2.2 and the corresponding derived nominal complements in 2.3. The gerundive nominal complements have gerundive nominals corresponding to the verbs in the sentences, while the derived nominal complements have derived nominals corresponding to the verbs in the sentences.

2.1a) John is eager to please.
  b) John refused the offer.
  c) John criticized the book.

2.2a) John's being eager to please
  b) John's refusing the offer
  c) John's criticizing the book

2.3a) John's eagerness to please
  b) John's refusal of the offer
  c) John's criticism of the book

Determiners

One characteristic shared by gerundive nominal complements and derived nominal complements is the presence of

possessive nouns corresponding to the subject nouns in the sentences. Chomsky points out that the two types of nominal complement differ in that the possessive nouns in derived nominal complements can be replaced by other determiners, as is shown by the derived nominal complements in 2.4 (cf. 2.3), while the possessive nouns in gerundive nominal complements cannot be so replaced, as is indicated by the fact that forms like those in 2.5 (cf. 2.2) do not occur. The derived nominal complements in 2.4 appear to be parallel to the derived nominal complements in 2.3, but the derived nominal complements in 2.6 are closer in meaning to those in 2.3 than the ones in 2.4 are.[2]

    2.4a) ?the eagerness to please
       b) the refusal of the offer
       c) the criticism of the book

    2.5a) *the being eager to please
       b) *the refusing the offer
       c) *the criticizing the book

    2.6a) ?the eagerness to please by John
       b) the refusal of the offer by John
       c) the criticism of the book by John

Adjective-Adverb Correspondences

A second difference between gerundive nominal complements and derived nominal complements which Chomsky discusses is the fact that derived nominal complements can have an adjective preceding the nominal, while gerundive nominal complements cannot. These prenominal adjectives correspond to adverbs in sentences and gerundive nominal complements, so that there are sentences like those in 2.7, with the corresponding gerundive nominal complements in 2.8, and the corres-

ponding derived nominal complements in 2.9. The fact that strings like those in 2.10 are unacceptable shows that gerundive nominal complements do not take prenominal adjectives.

    2.7a) John is overwhelmingly eager to please.
       b) John abruptly refused the offer.
       c) John criticized the book unmercifully.

    2.8a) John's being overwhelmingly eager to please
       b) John's abruptly refusing the offer
       c) John's criticizing the book unmercifully

    2.9a) John's overwhelming eagerness to please
       b) John's abrupt refusal of the offer
       c) John's unmerciful criticism of the book

    2.10a) *John's being overwhelming eager to please
       b) *John's abrupt refusing the offer
       c) *John's unmerciful criticizing the book

The prenominal adjectives in some derived nominal complements, such as those in 2.11, do not have corresponding adverbs in gerundive nominal complements, as in 2.12, or sentences, as in 2.13.

    2.11a) John's troublesome eagerness to please
       b) John's untimely refusal of the offer
       c) John's unmotivated criticism of the book

    2.12a) *John's being troublesomely eager to please
       b) *John's untimely refusing the offer
       c) *John's criticizing the book unmotivatedly

    2.13a) *John is troublesomely eager to please.
       b) *John untimely refused the offer.
       c) *John criticized the book unmotivatedly.

That the acceptability of the forms in 2.11, and the unacceptability of the forms in 2.12 and 2.13 is due to these adverbs alone can be seen by inspecting the forms in 2.1, 2.2, 2.7 and 2.8. The adjectives which appear in prenominal position in the derived nominal complements in 2.11 can also be predicated of such complements, as in 2.14.

2.14a) John's eagerness to please is troublesome.
   b) John's refusal of the offer was untimely.
   c) John's criticism of the book was unmotivated.

The prenominal adjectives in the derived nominal complements in 2.9 can also be predicated of those complements, as in 2.15.

2.15a) John's eagerness to please is overwhelming.
   b) John's refusal of the offer was abrupt.
   c) John's criticism of the book was unmerciful.

The parallel I have been drawing between the adverbs in sentences and gerundive nominal complements and the adjectives in derived nominal complements suggests that the adverbs and adjectives are derivationally related. The fact that the adverbs are morphologically derived from the adjectives by adding the suffix -ly reinforces that hypothesis.

The three-way correspondence between prenominal adjectives in derived nominal complements, adjectives predicated of derived nominal complements, and adverbs in sentences and gerundive nominal complements suggests that the adjectives and adverbs have as a common source a higher predicate. If the higher predicate is the highest matrix predicate (ignoring abstract higher predicates) then it may be expressed as an adverb of the embedded sentence (raised to surface sentencehood) or as a predicate on a derived nominal complement. If the higher predicate is in turn embedded under a predicate which will appear in surface structure, then it may be expressed as an adverb with a gerundive nominal complement, or as a prenominal adjective with a derived nominal complement. The higher predicate-prenominal adjective relation-

ship is also seen in simple noun phrases, so that no new
rule need be postulated to derive prenominal adjectives in
derived nominal complements from higher predicates.

Chomsky (1970:195) points out that a claim that the
prenominal adjectives in derived nominal complements are
derivationally related to adverbs leads to the prediction
that sentences like those in 2.16 will have corresponding
derived nominal complements like the structures in 2.17,
which are not acceptable.

2.16a) John refused the offer in a surprising manner.
    b) John is sincere to a limited extent.

2.17a) *John's refusal of the offer in a surprising manner
    b) *John's sincerity to a limited extent

However, there are structures like those in 2.18 which
include derived nominal complements, and which seem to cor-
respond to the sentences in 2.16.

2.18a) the surprising manner of John's refusal of
        the offer
    b) the limited extent of John's sincerity

Adverbs which are morphologically derived from adjec-
tives seem to be included within the scope of structures
which have corresponding derived nominal complements, while
adverbs which are prepositional phrases seem not to be
included within the scope of such structures. It is not
necessary to claim that the prenominal adjectives are
derived from adverbs to support the claim that the prenomi-
nal adjectives and adverbs are derived from the same under-
lying structures. The restrictions on the inclusion of ad-
verbial prepositional phrases within the scope of derived
nominal complements does not invalidate such a claim.

Object Prepositions

Another characteristic which distinguishes derived nominal complements from sentences and gerundive nominal complements is the presence of a preposition preceding the noun phrases in derived nominal complements which correspond to the objects of verbs in sentences, if such object noun phrases do not already have a preposition. Among the sentences in 2.19, corresponding gerundive nominal complements in 2.20 and corresponding derived nominal complements in 2.21, only the derived nominal complements have the preposition _of_ preceding the object.[3]

2.19a) John refused the offer.
   b) John criticized the book.
   c) John robbed the bank.

2.20a) John's refusing the offer
   b) John's criticizing the book
   c) John's robbing the bank

2.21a) John's refusal of the offer
   b) John's criticism of the book
   c) John's robbery of the bank

When object noun phrases are preceded by prepositions in sentences such as those in 2.22 and in the corresponding gerundive nominal complements in 2.23, then the same prepositions also appear in the corresponding derived nominal complements, as in 2.24.

2.22a) John was amused at the children's antics.
   b) John delighted in teasing Alice.
   c) John was doubtful about Dick's honesty.

2.23a) John's being amused at the children's antics
   b) John's delighting in teasing Alice
   c) John's being doubtful about Dick's honesty

2.24a) John's amusement at the children's antics
   b) John's delight in teasing Alice
   c) John's doubts about Dick's honesty

Pluralization

Another characteristic of derived nominals discussed by Chomsky (1970:189) is that they may be pluralized, while gerundive nominal complements may not. Thus, we find the derived nominal complements in 2.25, which correspond to the sentences in 2.26, while the corresponding gerundive nominal complements in 2.27 are not pluralized.

    2.25a) John's three proofs of the theorem
       b) John's repeated attempts to scale the wall
       c) Agnew's many attacks on the press

    2.26a) John proved the theorem three (times, ways, etc.).
       b) John repeatedly attempted to scale the wall.
       c) Agnew attacked the press many times.

    2.27a) John's proving the theorem three (times, ways, etc.)
       b) John's repeatedly attempting to scale the wall
       c) Agnew's attacking the press many times

The sentences in 2.26 and the gerundive nominal comple- ments in 2.27 express repetitive events. The derived nomi- nal complements in 2.25 also express repetitive events, but with plural nominals rather than adverbs of repetition. Repetition is not always expressed explicitly in sentences such as those in 2.28, which therefore have two sets of cor- responding derived nominal complements, those in 2.29, which express explicitly the singularity of the event, and those in 2.30, which express explicitly the repetition of the event.[4]

    2.28a) John has proved the theorem.
       b) John has attempted to scale the wall.
       c) Agnew has attacked the press.

    2.29a) John's proof of the theorem
       b) John's attempt to scale the wall
       c) Agnew's attack on the press

2.30a) John's proofs of the theorem
    b) John's attempts to scale the wall
    c) Agnew's attacks on the press

Not all derived nominals can be pluralized. The sen-
tences in 2.31 have the corresponding derived nominal comple-
ments with singular derived nominals in 2.32, but derived
nominal complements with plural derived nominals like those
in 2.33 corresponding to the sentences in 2.31 do not occur.

2.31a) The enemy has destroyed the city on three
            occassions.
    b) The crowd laughed repeatedly.

2.32a) the enemy's destruction of the city on three
            occassions
    b) the crowd's repeated laughter

2.33a) *the enemy's destructions of the city on three
            occassions
    b) *the crowd's repeated laughters

Auxiliaries

Another characteristic of the structure of derived nom-
inal complements discussed by Chomsky (1970:189) is the
absence of any auxiliary verbs. Gerundive nominal comple-
ments, on the other hand, can have any auxiliary (with the
exception exemplified by 2.35c) except modals. Perfective
aspect can appear in gerundive nominal complements, so that
sentences like those in 2.34a and b have the corresponding
gerundive nominal complements in 2.35a and b. Progressive
aspect can also appear in gerundive nominal complements, but
only in conjunction with perfective aspect, as in 2.35b, so
that the sentence in 2.34c does not have a corresponding
gerundive nominal complement with _being_ corresponding to a
form of _be_ which is acceptable (cf. 2.35c and d).[5]

2.34a) John has criticized the book.
b) John had been criticizing the book.
c) John is criticizing the book.

2.35a) John's having criticized the book
b) John's having been criticizing the book
c) *John's being criticizing the book
d) John's criticizing the book

Forms of the verb <u>be</u> which appear as copulas in sentences with predicate adjectives or predicate nouns, or in combination with past/passive participles in passive sentences, such as those in 2.36, also appear in gerundive nominal complements such as those in 2.37. But the derived nominal complements in 2.38 which correspond to the sentences in 2.36 do not have any form of <u>be</u>.

2.36a) John is strong.
b) Alice is beautiful.
c) John is the chairman.
d) The city was destroyed by the enemy.
e) Abby was acquitted by the jury.

2.37a) John's being strong
b) Alice's being beautiful
c) John's being the chairman
d) the city's being destroyed by the enemy
e) Abby's being acquitted by the jury

2.38a) John's strength
b) Alice's beauty
c) John's chairmanship[6]
d) the city's destruction by the enemy
e) Abby's acquittal by the jury

A Redefinition

I would now like to abandon my first provisional definition of derived nominal complements as those complements with nominals formed without an -<u>ing</u> suffix, and instead define derived nominal complements as those complements which show one or more of the following features: a wide

variety of determiners; prenominal adjectives instead of
adverbs; pluralization of the nominal; prepositions preced-
ing object noun phrases when they do not appear in the cor-
responding sentences; and complete absence of auxiliaries,
including copulas and the passive <u>be</u>. The form of the nom-
inal in derived nominal complements does not enter into
this definition.

<p align="center">Action Nominals</p>

Chomsky's Analysis

There are nominal complements which satisfy the new
definition of derived nominal complements given above, but
which have what appear to be gerundive nominals correspond-
ing to the verb, such as the nominal complements in 2.39.
Nominal complements of this type are called "action nomi-
nals" in Lees (1963) and Fraser (1970).

    2.39a) John's refusing of the offer
        b) John's proving of the theorem
        c) the growing of tomatoes

Chomsky (1970:214-15) believes that these complements
belong to a third class of nominal complements distinct from
both gerundive nominal complements and derived nominal com-
plements. He does not identify them as "action nominals."
Chomsky claims that these nominal complements appear to have
the same internal structure of noun phrases that derived nom-
inal complements have, as evidenced by the possibility of a
determiner other than a possessive noun appearing (cf. 2.39c),
but that prenominal adjectives seem quite unnatural in such
complements. He says that the complement is limited in

productivity as well, so that we cannot get structures like those in 2.40. Chomsky (1970:215) finally states that "there is an artificiality to the whole construction that makes it quite resistant to systematic investigation."

2.40a) *the feeling sad
    b) *the trying to win
    c) *the arguing about money
    d) *the leaving

I would like to put aside for now the problems involved in the forms in 2.39a and b and 2.40, and consider in detail the complement in 2.39c, the growing of tomatoes. Part of the data cited by Chomsky (1970:192) to support his claim that the Lexical Hypothesis provides the best explanation for the origin of derived nominals involves transitive verbs derived from intransitive verbs by the rule of CAUSATIVE FORMATION (cf. G. Lakoff, 1970), such as grow, as in John grows tomatoes, derived from grow, as in tomatoes grow. At some point in its derivation, the underlying structure of John grows tomatoes can be represented by the tree in 2.41. The structure underlying tomatoes grow is embedded as S_1 in the tree in 2.41.
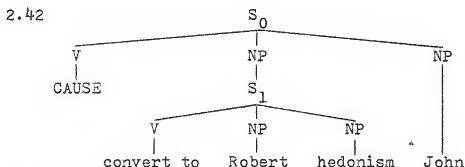
2.41)

Chomsky points out that there is a derived nominal complement, the growth of tomatoes, which corresponds to the

sentence <u>tomatoes grow</u>, but not to the sentence <u>John grows</u> <u>tomatoes</u>, as would be expected from the apparently parallel example of the derived nominal complement, <u>the rejection of</u> <u>the offer</u>, which corresponds to the verb phrase <u>reject the</u> <u>offer</u>. In other words, <u>the rejection of the offer</u> is an object nominal complement, while <u>the growth of tomatoes</u> is a subject nominal complement, and Chomsky takes the fact that there is no interpretation of <u>the growth of tomatoes</u> as an object nominal complement as proof that there is no derived nominal complement corresponding to <u>John grows tomatoes</u>. In terms of the Lexical Hypothesis, this is to be expected because <u>John grows tomatoes</u> involves a derivation from an underlying structure which includes <u>tomatoes grow</u> as an embedded sentence, as in the tree in 2.41. This is consistent with the claim that derived nominals are associated lexically with the underlying verb. Since <u>grow</u> occurs in the lexicon only in the intransitive, noncausative sense, the transitive sense being derived transformationally by the rule of CAUSATIVE FORMATION, only the intransitive sense can have a corresponding derived nominal, according to the Lexical Hypothesis.

<u>Some Counterexamples to Chomsky's Analysis</u>

Smith (1972) has pointed out that there are many exceptions to Chomsky's claims concerning the occurrence of derived nominals corresponding to verbs derived by the rule of CAUSATIVE FORMATION. The verb <u>convert</u> occurs as both transitive and intransitive, and both forms have associated

derived nominals. Thus, <u>Robert's conversion to hedonism</u>,
which at some point in its derivation has an underlying
structure like that of the embedded sentence S_1 in the tree
in 2.42, and <u>John's conversion of Robert to hedonism</u>, which
at some point in its derivation has an underlying structure
like that of the whole tree in 2.42, are both acceptable
derived nominal complements. The derived nominal complement
<u>the conversion of Robert</u>, like many other nominal complements
such as <u>the shooting of the hunters</u>, is therefore interpreta-
ble as either a subject nominal complement or as an object
nominal complement.

2.42

```
                          S_0
          _____|_____
          |                  |                   |
          V                  NP                  NP
          |                  |                   |
        CAUSE               S_1                 John
               _____|_____
               |             |             |
               V             NP            NP
               |             |             |
          convert to      Robert       hedonism
```

Some verbs listed by Smith which also form derived nom-
inals in both transitive and intransitive forms are <u>explode</u>,
<u>divide</u>, <u>accelerate</u>, <u>expand</u>, <u>repeat</u>, <u>neutralize</u>, <u>conclude</u>
and <u>unify</u>. She then points out that all the listed counter-
examples share a morphological property: their derived nomi-
nals are formed with suffixes of Latin origin. She then
goes on to claim that there are almost as many verbs of the
type <u>convert</u> as there are of the type <u>grow</u>, and then states
what she sees as the conditioning factor in distinguishing
the two types: "Whether or not a verb has a transitive

nominal depends on how the nominal is formed. If a causative verb takes a nominalizing suffix of Latin origin (-<u>tion</u>, -<u>al</u>, -<u>ment</u>), then it has both transitive and intransitive derived nominals. If a causative verb does not take such a nominalizing suffix, then it occurs only intransitively in derived nominals." She then observes that, in general, verbs of Latin origin form derived nominals with the suffixes of Latin origin, while verbs of what she calls Anglo-Saxon origin form derived nominals with the suffixes -<u>th</u>, -<u>ness</u>, or ∅ (null), which can be considered to be native, as opposed to the suffixes borrowed from Latin.

Smith has, based on the data above, reached the conclusion that "the grammar must distinguish at least two classes of 'causative' verbs: those that do and do not have transitive derived nominals." As we have just seen above, that distinction is to be based on something like a native/borrowed-Latin dichotomy. It seems very strange, however, to state that a part of the lexicon associated with borrowed (Latinate) derivational suffixes shows more productivity than another part of the lexicon associated with native derivational suffixes. This raises the possibility that the causative verbs associated with native derivational suffixes also have corresponding derived nominals, but that for some reason Smith and Chomsky have failed to recognize them. Using the definition of derived nominal complements I have developed above, I will now look for derived nominal complements corresponding to sentences with such causative verbs.

Nominals of Causatives

Consider verbs such as grow, raise and move. These verbs occur in both intransitive and transitive forms, the latter being derived by the rule of CAUSATIVE FORMATION. The verbs in the intransitive form are used in sentences such as those in 2.43, which have the corresponding derived nominal complements in 2.44 and 2.45.[7]

2.43a) The tree grew slowly.
  b) The temperature rose rapidly.
  c) The table moved mysteriously.

2.44a) the tree's slow growth
  b) the temperature's rapid rise
  c) the table's mysterious movement

2.45a) the slow growth of the tree
  b) the rapid rise of the temperature
  c) the mysterious movement of the table

The verbs in the transitive form are used in sentences such as those in 2.46, which have the corresponding gerundive nominal complements in 2.47, and the corresponding derived nominal complements in 2.48 and 2.49.[8]

2.46a) John grows tomatoes skillfully.
  b) Tom raised the temperature deliberately.
  c) Mike moved the table accidentally.

2.47a) John's growing tomatoes skillfully
  b) Tom's raising the temperature deliberately
  c) Mike's moving the table accidentally

2.48a) John's skillful growing of tomatoes
  b) Tom's deliberate raising of the temperature
  c) Mike's accidental moving of the table

2.49a) the skillful growing of tomatoes by John
  b) the deliberate raising of the temperature by Tom
  c) the accidental moving of the table by Mike

The derived nominal complements in 2.48 and 2.49 are completely consistent with the definition of derived nominal

complements which I have adopted. I will therefore assume
for now that -ing is one of the suffixes forming nominals
in derived nominal complements, which happens to be homo-
phonous with the gerundive suffix -ing.

Nominals of Deadjectival Verbs

The rule of CAUSATIVE FORMATION is not the only rule by
which a verb may be derived from an underlying form with dif-
ferent properties. Smith (1972) mentions that we find the
derived nominal complement the light's dimness, but not
*John's dimness of the light. Dim is homophonous for three
senses: adjective, intransitive verb derived by the rule of
INCHOATIVE FORMATION (cf. G. Lakoff, 1970), and transitive
verb derived by the rule of CAUSATIVE FORMATION. Other
adjective-verb sets related by these rules are low:lower:
lower and wide:widen:widen. The adjectives are used in sen-
tences like those in 2.50, which have the corresponding ger-
undive nominal complements in 2.51, and the corresponding
derived nominal complements in 2.52 and 2.53.

2.50a) The light was dim.
    b) The bridge was low.
    c) The road was wide.

2.51a) the light's being dim
    b) the bridge's being low
    c) the road's being wide

2.52a) the light's dimness
    b) the bridge's lowness
    c) the road's width

2.53a) the dimness of the light
    b) the lowness of the bridge
    c) the width of the road

The intransitive verbs are used in sentences like those in 2.54, which have the corresponding gerundive nominal complements in 2.55, and the corresponding derived nominal complements in 2.56 and 2.57.

    2.54a) The light slowly dimmed.
       b) The bridge gradually lowered.
       c) The road suddenly widened.

    2.55a) the light's slowly dimming
       b) the bridge's gradually lowering
       c) the road's suddenly widening

    2.56a) the light's slow dimming
       b) the bridge's gradual lowering
       c) the road's sudden widening

    2.57a) the slow dimming of the light
       b) the gradual lowering of the bridge
       c) the sudden widening of the road

The transitive verbs are used in sentences like those in 2.58, which have the corresponding gerundive nominal complements in 2.59, and the corresponding derived nominal complements in 2.60 and 2.61.

    2.58a) John suddenly dimmed the light.
       b) The tender gradually lowered the bridge.
       c) the city widened the road recently.

    2.59a) John's suddenly dimming the light
       b) the tender's gradually lowering the bridge
       c) the city's widening the road recently

    2.60a) John's sudden dimming of the light
       b) the tender's gradual lowering of the bridge
       c) the city's recent widening of the road

    2.61a) the sudden dimming of the light by John
       b) the gradual lowering of the bridge by the tender
       c) the recent widening of the road by the city

All of the derived nominal complements in 2.56, 2.57, 2.60 and 2.61 have nominals formed with the _-ing_ suffix. Only the nominals in 2.52 and 2.53, which correspond to

adjectives, are formed without the -ing suffix. Both this set of adjectives and verbs and the previous set of verbs show the same pattern. The form of the verb which is presumably entered in the lexicon (the intransitive form of grow, rise and move and the adjective form of dim, low and wide) has a corresponding nominal in derived nominal complements formed by means other than the -ing suffix, while all the derived forms of the verbs have corresponding nominals in derived nominal complements formed with the -ing suffix. This suggests that the form of the associated nominals is specified in the lexicon, but that this specification is not retained when other forms of the verbs or adjectives are derived from the form entered in the lexicon. With verbs like convert, on the other hand, the specification of the form of the associated nominal is retained when another form of the verb is derived from the lexical entry.

Other Nominals in -ing

Verbs derived from other underlying verbs are not the only verbs to correspond to nominals in derived nominal complements formed with the -ing suffix. Sink is another verb which is used both intransitively and transitively. The intransitive use is illustrated in 2.62a, the transitive in 2.62b. These sentences have the corresponding gerundive nominal complements in 2.63, and the corresponding derived nominal complements in 2.64 and 2.65.

2.62a) The Bismark sank.
   b) The British Navy sank the Bismark.

2.63a) the Bismark's sinking
  b) the British Navy's sinking the Bismark

2.64a) the Bismark's sinking
  b) the British Navy's sinking of the Bismark

2.65a) the sinking of the Bismark
  b) the sinking of the Bismark by the British Navy

Presumably, there is no specification of the form of the nominal in a derived nominal complement corresponding to sink in the lexical entry, so that the form with -ing is supplied by the grammar for sink intransitive and transitive just as it is supplied for the nominals in derived nominal complements corresponding to sentences with the derived verbs grow, raise, move, dim, lower and widen. One consequence of this is that it is possible for the gerundive nominal complement and derived nominal complement corresponding to a particular sentence to be identical in surface structure, as are the forms in 2.63a and 2.64a. It will therefore not always be possible to decide whether a nominal complement is actually a gerundive nominal complement or a derived nominal complement, unless the context supplies such information.

One objection which might be made to the identification of any nominal complements with nominals formed with -ing as derived nominal complements is that they do not readily form plurals. However, it is not true that they never form plurals, as shown by the examples in 2.66.

2.66a) the wanderings of an old mind
  b) the leavings of a great feast
  c) the makings of a great scholar
  d) the cravings of a glutton
  e) the comings and goings of the workers

As was noted above (cf. 2.33), not all derived nominals form plurals, so the fact that many apparent derived nominals in -ing do not is not strong counter-evidence.

Paired Nominals

The nominal complements in 2.39a and b (repeated here in 2.67), cited by Chomsky (1970:214), appear to be derived nominal complements with nominals formed with -ing which are parallel to the derived nominal complements in 2.68, which have nominals formed other than with the suffix -ing.

    2.67a) John's refusing of the offer
       b) John's proving of the theorem

    2.68a) John's refusal of the offer
       b) John's proof of the theorem

The derived nominal complements with nominals formed other than with the -ing suffix in 2.68 readily take prenominal adjectives, as was discussed above, so that we have derived nominal complements like those in 2.69.

    2.69a) John's abrupt refusal of the offer
       b) John's brilliant proof of the theorem

The nominal complements with nominals formed with the -ing suffix in 2.67 seem to less readily accept prenominal adjectives, as is indicated by the strangeness of the nominal complements in 2.70. That this strangeness is not due to the nominal having an -ing suffix alone is shown by the normal occurrence of prenominal adjectives with derived nominal complements with nominals formed with -ing in 2.48, 2.49, 2.56, 2.57, 2.60 and 2.61 above.

    2.70a) ?John's abrupt refusing of the offer
       b) ?John's brilliant proving of the theorem

Chomsky (1970:215) notes that derived nominal comple-
ments with nominals formed with the -ing suffix seem rather
clumsy when a derived nominal complement with a nominal
formed other than with the -ing suffix also exists. It is
also these nominal complements which do not readily take a
prenominal adjective. Since I have claimed above that the
suffix -ing in general appears in derived nominal comple-
ments when no other means of forming the nominal is speci-
fied, it seems possible that pairs of nominals like refusal:
refusing and proof:proving represent a misapplication of the
rule supplying the -ing suffix, and the full regularity of
derived nominal complements with forms like refusing and
proving is blocked by the existance of forms like refusal
and proof.

Some Apparent Counterexamples

Chomsky (1970:214) also noted that derived nominal com-
plements with -ing seem to be limited in production since we
do not get forms like those in 2.40, repeated here as 2.71.

    2.71a) *the feeling sad
        b) *the trying to win
        c) *the arguing about money
        d) *the leaving

The forms in 2.71 would presumably correspond to the
verb phrases in 2.72.

    2.72a) feel sad
        b) try to win
        c) argue about money
        d) leave

Chomsky (1970:186) argues that sentences like 2.73a
have a structure of Noun Phrase-Verb-Predicate parallel to

the Noun Phrase-Verb-Noun Phrase structure of a sentence like 2.73b.

    2.73a) John felt sad.
        b) John felt sadness.

    There is a derived nominal complement which corresponds to 2.73b, <u>John's feeling of sadness</u>. Peter Menzel (personal communication) has pointed out to me that <u>feeling</u> is the nominal of a derived nominal complement, and thus would be followed by a preposition, presumably <u>of</u>, so that the proper question is why we do not get *<u>the feeling of sad</u>. The presence of the preposition means that any complement of <u>feeling</u> within a derived nominal complement must be nominalized. Hence, derived nominalization can apply to an embedded sentence like that in 2.73b, but not to one like that in 2.73a, unless <u>sad</u> is nominalized to <u>sadness</u> as part of the nominalization of <u>feel</u>.

    The nominal complement in 2.71c, *<u>the arguing about money</u>, would not be expected to occur because the regular derived nominal complement corresponding to <u>argue about money</u> is <u>the argument about money</u>.

    Chomsky (1970:214) gives as unacceptable the example in 2.71d, <u>the leaving</u>. At least some speakers do accept nominal complements like <u>John's hurried leaving</u> (cf. <u>John left hurriedly</u>), and I am told that such forms have appeared in print. My own judgment agrees with that of Chomsky, however. The dialects that accept forms like <u>John's hurried leaving</u> present no problem to my analysis, so I will turn to those dialects that do not accept such forms.

In my dialect, <u>leave</u> (=<u>depart</u>), <u>try</u> (=<u>attempt</u>) (cf.
2.71b), <u>be</u> (=<u>exist</u>, <u>occur</u>, <u>be present</u>), <u>have</u> (=<u>possess</u>)
and <u>live</u> (=<u>reside</u>) (and other verbs) are alike in that they
have no corresponding nominal forms which appear in derived
nominal complememts.. (I am refering here to <u>be</u> and <u>have</u>
when they are main surface verbs, not auxiliaries.) The
existence of verbs such as these poses a serious challenge
to the transformationalist position. It would appear that
the rule (or rules) producing derived nominal complements is
blocked from applying to underlying structures with certain
verbs as their predicates. It is Chomsky's claim that this
is one of a number of facts supporting the Lexical Hypothe-
sis over the transformationalist position.

The verbs mentioned above (which are all of Germanic
origin) occur in sentences like those in 2.74.

    2.74a) John tried vainly to win the race.
       b) John left hurriedly on the bus.
       c) There is a God.
       d) There was a riot yesterday.
       e) There is some wine in the bottle.
       f) John has a car.
       g) Bill usually lives in a hotel.

The Latinate synonyms of those verbs (for meanings
inherent in the sentences in 2.74) occur in sentences like
those in 2.75.

    2.75a) John attempted vainly to win the race.
       b) John departed hurriedly on the bus.
       c) There exists a God.
       d) There occurred a riot yesterday.
       e) There is some wine present in the bottle.
       f) John possesses a car.
       g) Bill usually resides in a hotel.

I find the sentences in 2.75 to be formal and even awkward in comparison to those in 2.74, a difference presumably attributable to the choice of predicate.

All of these sentences have acceptable corresponding gerundive nominal complements, those in 2.76 corresponding to the sentences in 2.74, and those in 2.77 corresponding to the sentences in 2.75.

2.76a) John's trying vainly to win the race
   b) John's leaving hurriedly on the bus
   c) there being a god
   d) there being a riot yesterday
   e) there being some wine in the bottle
   f) John's having a car
   g) Bill's usually living in a hotel

2.77a) John's vainly attempting to win the race
   b) John's departing hurriedly on the bus
   c) there existing a god
   d) there occurring a riot yesterday
   e) there being some wine present in the bottle
   f) John's possessing a car
   g) Bill's usually residing in a hotel

Again, the gerundive nominal complements in 2.76 based on Germanic verbs seem less formal than the gerundive nominal complements based on Latinate verbs in 2.77.[9]

Finally, there are no derived nominal complements corresponding to the sentences in 2.74 and gerundive nominal complements in 2.76, the forms in 2.78 being unacceptable.

2.78a) *John's vain trying to win the race
   b) *John's hurried leaving on the bus
   c) *the being of a god
   d) *the being of a riot yesterday
   e) *the being of some wine in the bottle
   f) *John's having of a car
   g) *Bill's usual living in a hotel

On the other hand, the derived nominal complements in 2.79, which correspond to the sentences in 2.75 and gerundive nominal complements in 2.77, are perfectly acceptable.

2.79a) John's vain attempt to win the race
    b) John's hurried departure on the bus
    c) the existence of a god
    d) the occurrence of a riot yesterday
    e) the presence of some wine in the bottle
    f) John's possession of a car
    g) Bill's usual residence in a hotel

It seems, therefore, that it is possible for a Germanic (or native) verb to have no corresponding nominal in a derived nominal complement when there is a closely synonymous Latinate verb with such a corresponding nominal. The transformationalist position may be maintained in the face of these examples in at least two ways: verbs like <u>try</u>, <u>leave</u>, <u>be</u>, <u>have</u> and <u>live</u> can be marked in the lexicon to block DERIVED NOMINALIZATION, which ignores the existence of the Latinate synonyms; or, some sort of lexical alternation may be posited, with the Latinate option being mandatory in derived nominal complements. I prefer the second position, and I will discuss some different evidence for such lexical alternation for the synonyms of <u>be</u> in Chapter Three.

<u>Action Nominals and the Head Noun</u> Action

In Chapter One I noted that derived nominal complements did not occur as complements of the head noun <u>action</u>. If action nominal complements are a subclass of derived nominal complements, then they should not occur as complements of <u>action</u> either. The examples in 2.80 show that this is indeed the case.

```
2.80a) *John's action of opening of the door
    b) *John's action of sinking of the boat
    c) *John's action of dimming of the light
    d) *John's action of refusing of the offer
    e) *John's action of proving of the theorem
```

Menzel (1970) argues that the head nouns associated with nominal complements in specific structures define what the nominal complement is, i.e., a complement of _event_ is an event, a complement of _action_ is an action, etc. It is ironic that those structures called "action nominals" cannot be complements of the head noun _action_, and thus are not actions.

Summary

I have shown in this section that the so-called "action nominals" have the surface structure of derived nominal complements. That is, the nominal complements sometimes called "action nominals" share with other derived nominal complements the features of a possible variety of determiners, prenominal adjectives corresponding to adverbs in sentences, prepositions with all objects, the possibility of pluralization (although less for action nominals than is so for other derived nominal complements), the complete absence of auxiliaries, and the restriction from being the complement of the head noun _action_. The fact that action nominal complements have nominals formed with the suffix -_ing_, as do gerundive nominal complements, ought to have no bearing on this classification.

Agentive Nominals

Agentive nominal complements share the characteristics of derived nominal complements. The examples in 2.81, corresponding to the sentences in 2 82, show that such complements may have determiners other than possessive nouns, prenominal adjectives, object prepositions and pluralization. Agentive nominal complements do not have any reflexes of auxiliaries.

2.81a) the short-sighted designers of this building
   b) the unlucky holders of Imperial Russian bonds
   c) the greedy despoilers of the Earth

2.82a) The ones who designed this building were
        short-sighted.
   b) The ones who held Imperial Russian bonds
        were unlucky.
   c) The ones who despoil the Earth are greedy.

Some characteristics of agentive nominal complements deserve further comment. Agentive nominal complements never have possessive nouns as determiners which correspond to underlying agents. When agentive nominal complements do have possessive nouns as determiners, as in 2.83, the possessive nouns correspond to the underlying objects of the verbs in sentences which correspond to the agentive nominal complements, as in 2.84.

2.83a) Mike's helper
   b) General Electric's workers
   c) America's educators

2.84a) Someone helps Mike.
   b) Some people work for General Electric.
   c) Some people educate America.

It is usually possible to get an agentless passive sentence closely corresponding to such agentive nominal complements, as in 2.85a and c, although 2.85b seems odd.

2.85a) Mike is helped.
b)??General Electric is worked for.
c) America is educated. (Not the stative reading.)

However, the sentences in 2.84 (and 2.85) are not the only ones corresponding to the agentive nominal complements in 2.83. For instance, on a different reading, 2.83c, America's educators, corresponds to the educators of America.

The absence of possessive nouns corresponding to underlying agents in agentive nominal complements is due to the fact that sentences corresponding to agentive nominal complements always have nonspecified agents. Other derived nominal complements may also correspond to sentences with nonspecific agents, as in the refusal of the offer, which, like the agentless passive sentence, the offer was refused, corresponds to an underlying structure of the form SOMEONE refused the offer.

The prenominal adjectives in agentive nominal complements are not always related to adverbs in corresponding sentences. Vendler (1968) points out that beautiful in the beautiful dancer may correspond in meaning to beautiful in the dancer is beautiful, or to beautifully in SOMEONE dances beautifully.

The nominals in agentive nominal complements also seem to more readily form compounds with their objects than do the nominals of other derived nominal complements. Thus, we

find many compounds like those in 2.86 corresponding to the agentive nominal complements in 2.87.

2.86a) lion tamer
    b) bookkeeper
    c) shock absorber

2.87a) tamer of lions
    b) keeper of books
    c) absorber of shocks

But some nominals in other derived nominal complements also form such compounds, as in 2.88, corresponding to the derived nominal complements in 2.89.

2.88a) token payment
    b) tax assessment
    c) art collection

2.89a) payment of a token
    b) assessment of a tax
    c) collection of art

Agentive nominal complements have the same surface structure as derived nominal complements. I see no reason to not include agentive nominal complements in the class of derived nominal complements.

Summary

In this chapter I have defined derived nominal complements in terms of surface structure as those nominal complements which allow a variety of determiners, allow prenominal adjectives which correspond to adverbs in sentences, have prepositions with all objects, and allow the nominal to be pluralized, but which have no auxiliaries. Using this definition, I have then argued that the structures known as action nominals and agentive nominals are really subclasses of the class of derived nominal complements.

NOTES

[1] Chomsky presumably also excludes agentive nominals formed with -er, although he never mentions them except to argue against the positing of abstract verbs underlying nominals which otherwise have no corresponding predicates. Agentive nominal complements share several characteristics with derived nominal complements, and I will argue below that agentive nominal complements are a special class of derived nominal complements.

[2] The derived nominal complements in 2.4a and 2.6a seem quite strange to me, but 2.4a, at least, is acceptable in a context such as <u>the eagerness to please shown by John</u>, which, however, seems to correspond to the sentence, <u>an eagerness to please was shown by John</u>, and not to the sentence in 2.1a.

[3] The preposition <u>of</u> is the unmarked form. Some verbs have corresponding derived nominal complements with other prepositions, e.g., <u>attack:attack on</u>.

[4] Simple past tense seems to imply a single occurrence of an event unless otherwise specified. Present perfect tense seems to imply only at least one occurrence of an event.

[5] The constraint on the occurrence of adjacent forms with the -<u>ing</u> suffix, which blocks constructions like that in 2.35c, is discussed in Ross (1972b) and Milsark (1972).

[6] The formation of derived nominal complements corresponding to sentences with predicate nouns does not seem to be completely free. Thus, while <u>John's manhood</u> is possible, it corresponds to a limited meaning of <u>John is a man</u>, and <u>Jane's womanhood</u> seems very strange. Nevertheless, many predicate nouns do have corresponding derived nominals, as can be seen in the sentences in <u>i</u> with the corresponding derived nominal complements in <u>ii</u>.

<u>i</u>a) Joan enjoys being a mother.
 b) Ralph was governor recently.
 c) Billy is a minor.
 d) Stephen was a martyr.
 e) John is a member in good standing in the lodge.
 f) Sam is legally a pauper.

<u>ii</u>a) <u>Joan enjoys</u> motherhood.
  b) Ralph's recent governorship
  c) Billy's minority
  d) Stephen's martyrdom
  e) John's membership in good standing in the lodge
  f) Sam's legal pauperdom

Chomsky (1970:198-99) argues that the inclusion of verbs and adjectives in a category of <u>predicator</u>, as in G. Lakoff (1970:115ff.), is wrong, since nouns share the same distributional properties. The examples above of derived nominals corresponding to predicate nouns supports Chomsky's conclusion. Chomsky further claims, however, that such distributional properties are properties of lexical categories. It appears to be more correct to say that properties such as the stative-active distinction and the possession of a corresponding derived nominal, are properties of predicates. Such properties are exhibited by verbs (which are always predicates), adjectives (which presumably are always predicates in underlying structures) and <u>predicate</u> nouns.

[7] The corresponding gerundive nominal complements, as in i, which I find awkward, but still acceptable, are completely unacceptable to at least some speakers. I have no explanation for this fact.

    i a) the tree's growing slowly
      b) the temperature's rising rapidly
      c) the table's moving mysteriously

More generally, possessive inanimate nouns are often awkward. Arnold Zwicky (personnel communication) pointed out that historically inanimates have not always been able to form possessives in English. The two facts may be related.

[8] Although move is borrowed ultimately from Latin and the derived nominal corresponding to the intransitive form of the verb is formed with -ment, move does not appear to belong to the class of Latinate verbs described by Smith (1972).

[9] I will discuss the fact that there does not take the possessive suffix in gerundive nominal complements in more detail in Chapter Three.

THE PRODUCTIVITY OF DERIVED NOMINAL COMPLEMENTS

The Evidence for Lack of Productivity

One of the three reasons Chomsky (1970:187-88) gives for rejecting a transformational account of the origin of derived nominal complements in favor of the Lexical Hypothesis is that gerundive nominal complements "can be formed fairly freely from propositions of subject-predicate form," while "productivity is much more restricted" for derived nominal complements. In support of this statement, Chomsky (1970:188-89) refers to the example of sentences like those in 3.1, which have the corresponding gerundive nominal complements in 3.2, and the corresponding derived nominal complements in 3.3, while the sentences in 3.4 have the corresponding gerundive nominal complements in 3.5, but the expected corresponding derived nominal complements in 3.6 are not acceptable.

      3.1a) John is eager to please.
         b) John refused the offer.
         c) John criticized the book.

      3.2a) John's being eager to please
         b) John's refusing the offer
         c) John's criticizing the book

      3.3a) John's eagerness to please
         b) John's refusal of the offer
         c) John's criticism of the book

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3.4a) John is easy to please.
 b) John is certain to win the prize.
 c) John amused the children with his stories.

3.5a) John's being easy to please
 b) John's being certain to win the prize
 c) John's amusing the children with his stories

3.6a) *John's easiness to please
 b) *John's certainty to win the prize
 c) *John's amusement of the children with his stories

Chomsky (1970:189) points out that there are acceptable derived nominal complements like those in 3.7 which superficially resemble the unacceptable strings in 3.6, and which correspond to the sentences in 3.8 and gerundive nominal complements in 3.9, and comments, "these discrepancies between gerundive and derived nominal [complements] call for explanation. Specifically, we must determine why the examples of [3.6] are ruled out although those of [3.7] are permitted."

3.7a) John's eagerness to please
 b) John's certainty that Bill will win the prize
 c) John's amusement at the children's antics

3.8a) John is eager to please.
 b) John is certain that Bill will win the prize.
 c) John was amused at the children's antics.

3.9a) John's being eager to please
 b) John's being certain that Bill will win the prize
 c) John's being amused at the children's antics

In this chapter I will try to answer Chomsky's question by showing that sentences like those in 3.4, which do not have acceptable corresponding derived nominal complements, have undergone certain transformational rules in their derivations which sentences like those in 3.8, which do have acceptable corresponding derived nominal complements, have not undergone. Chomsky (1970:191) claims that this is so

because derived nominal complements are noun phrases in deep
structure, not embedded propositions. He claims that
derived nominal complements correspond only to deep struc-
ture phrase markers and a few transforms. I will argue that
most rules are blocked from applying to derived nominal com-
plements, or have different conditions on their applicabili-
ty to derived nominal complements, because they are nominal-
ized embedded propositions. I will also show that many
rules can apply in the derivation of gerundive nominal com-
plements that cannot apply in the derivation of derived nom-
inal complements.

I will show in detail how the application of a number
of rules is blocked or modified in the derivation of derived
nominal complements. I will discuss the effect of adopting
a predicate-initial analysis on the formulation of rules,
and certain consequent simplifications of the rules, parti-
cularly with regard to derived nominal complements. I will
argue that certain facts of derived nominal complements
raise problems for the currently accepted formulation of the
rule of IT-EXTRAPOSITION, and that with a predicate-initial
analysis, no rule of IT-EXTRAPOSITION is needed in a grammar
of English. Throughout this chapter I will show that when-
ever a sentence does not have an acceptable corresponding
derived nominal complement, it is because the sentence has
undergone a rule in its derivation which is blocked from
applying to derived nominal complements.[1]

Chomsky's Subcategorization Account

I will first consider Chomsky's (1970:191) claim that a correct account of the facts of productivity of derived nominal complements should be based on subcategorization features. The pair of sentences in 3.10 and the pair of sentences in 3.11, with their corresponding gerundive and derived nominal complements, present parallel problems.

     3.10a) John is easy to please.
        b) John is eager to please.

     3.11a) John is certain to win the prize.
        b) John is certain that Bill will win the prize.

The corresponding gerundive nominal complements in 3.12 and 3.13 and the corresponding derived nominal complements in 3.14b and 3.15b are all acceptable, while the expected corresponding derived nominal complements in 3.14a and 3.15a are not acceptable.

     3.12a) John's being easy to please
        b) John's being eager to please

     3.13a) John's being certain to win the prize
        b) John's being certain that Bill will win the prize

     3.14a) *John's easiness to please
        b) John's eagerness to please

     3.15a) *John's certainty to win the prize
        b) John's certainty that Bill will win the prize

Chomsky (1970:191) attempts to explain the acceptability of the derived nominal complements in 3.14b and 3.15b, in contrast with the unacceptability of forms like those in 3.14a and 3.15a, in terms of the subcategorization features of _eager_, _easy_ and _certain_. Chomsky states that _eager_ is entered in the lexicon with a strict subcategorization

feature indicating that it can take a sentential complement, as in 3.16, derived from underlying structures something like those in 3.17.

3.16a) John is eager to please.
   b) John is eager for us to please.

3.17a) John is eager $[_S$John please SOMEONE$]_S$

   b) John is eager $[_S$we please SOMEONE$]_S$

Chomsky says that no further comment is necessary to account for the acceptability of the derived nominal complements in 3.18.

3.18a) John's eagerness to please
   b) John's eagerness for us to please

According to the Lexical Hypothesis, the lexical entry for _eager_ is also the entry for _eagerness_, and the strict subcategorization feature applies to adjective and nominal alike. Thus, _eager_ can appear in a construction of the form Noun Phrase-Predicate-Sentential Complement, and _eagerness_ can appear in a construction of the form Possessive Noun-Nominal-Sentential Complement.

Chomsky claims that, on the other hand, there is no such subcategorization feature in the lexical entry for _easy_ and that there are no base phrase markers of the form _easy_-Sentential Complement. Chomsky (1970:191) says that _easy_ appears in base phrase markers as an adjective predicated of propositions as subject, as in the sentences in 3.19, with sentences like those in 3.20 derived by _IT_-EXTRA-POSITION, and with sentences like those in 3.21 derived in turn from extraposed sentences by _TOUGH_-MOVEMENT.[2]

3.19a) To please John is easy.[3]
   b) For us to please John is easy.

3.20a) It is easy to please John.
   b) It is easy for us to please John.

3.21a) John is easy to please.
   b) John is easy for us to please.

3.22a) John is eager to please.[4]
   b) John is eager for us to please.

Even though we get sentences like those in 3.21, which in surface form exactly parallel those in 3.22, Chomsky argues that just as _easy_ cannot be introduced into structures of the form Subject-Predicate-Sentential Complement, _easiness_ cannot be introduced into structures of the form Possessive Noun-Nominal-Sentential Complement, thus preventing the formation of derived nominal complements like those in 3.23.

3.23a) *John's easiness to please
   b) *John's easiness for us to please

Chomsky assumes that gerundive nominal complements are transformationally derived from structures which are in turn derived from base structures. That is, GERUNDIVE NOMINALIZATION applies to embedded sentences which have already been subject to all or almost all cyclical rules. It is therefore possible to have gerundive nominal complements like those in 3.24.

3.24a) John's being easy to please
   b) John's being easy for us to please

Chomsky is assuming that transformations apply to structures dominated by an S but not to structures dominated by an NP even though the two types of structures may be composed of the same lexical items.

Similarly, Chomsky (1970:191) states that <u>certain</u>, with the meaning used in 3.11b, <u>John is certain that Bill will win the prize</u>, also has a subcategorization feature which allows <u>certain</u> in this meaning to take a sentential complement in a structure like $[_S[_{NP}\underline{John}]_{NP}[_{VP}[_V\underline{be\ certain}]_V[_S\underline{Bill\ will\ win\ the\ prize}]_S]_{VP}]_S$, from which 3.11b is derived. Thus, the derived nominal <u>certainty</u>, corresponding to this meaning of <u>certain</u>, has the same subcategorization feature, and can appear in derived nominal complements with a sentential complement, as in 3.15b, <u>John's certainty that Bill will win the prize</u>.

Like the lexical entry for <u>easy</u>, the lexical entry for <u>certain</u> in the meaning used in 3.11a, <u>John is certain to win the prize</u>, has no subcategorization feature allowing <u>certain</u> in this meaning to take a sentential complement. Chomsky says that <u>certain</u> in this meaning appears in base phrase markers as an adjective predicated of propositions as subject, as in <u>for John to win the prize is certain</u>. Applying the same arguments Chomsky used with <u>easy</u>, sentences like <u>it is certain for John to win the prize</u> are derived by <u>IT</u>-EXTRAPOSITION, and sentences like <u>John is certain to win the prize</u> are derived by RAISING-TO-SUBJECT from extraposed sentences.[5]

According to the Lexical Hypothesis, derived nominals occur in nominal structures corresponding to the base phrase markers of sentences. Such nominal structures are not subject to most rules which apply to sentences. The derived

nominal <u>certainty</u> corresponding to the second meaning of
<u>certain</u>, like <u>easiness</u>, cannot occur in nominal structures
corresponding to derived phrase markers.

Chomsky has argued that the lack of productivity of
derived nominal complements is explained by the Lexical
Hypothesis. Under that hypothesis, *<u>John's easiness to</u>
<u>please</u> is not acceptable because the lexical entry underly-
ing <u>easy</u> and <u>easiness</u> does not have a subcategorization
feature allowing sentential complements. On the other hand,
<u>John's eagerness to please</u> is acceptable because the lexical
entry underlying <u>eager</u> and <u>eagerness</u> has a subcategorization
feature allowing sentential complements.

<u>RAISING Rules</u>

<u>RAISING-TO-OBJECT</u>

As was indicated in Note 2 of this chapter, RAISING is
a general term for three different movement transformations.
The first movement I will discuss here is from subject of an
embedded sentence to object of the next highest sentence, as
has occurred in the derivation of the sentences in 3.25,
which are derived from the same underlying structures as the
sentences in 3.26.[6]

    3.25a) John believes himself to be heroic.
       b) Bill expects them to be here soon.
       c) Dick is believed to have been involved by everyone.

    3.26a) John believes that he is heroic.
       b) Bill expects that they will be here soon.
       c) Everyone believes that Dick was involved.

That the nouns in question have been raised to object
position in the higher sentences is indicated by the reflex-

ive form <u>himself</u> in 3.25a, the accusative <u>them</u> in 3.25b and
the fact that <u>Dick</u> is the derived subject in a passive sen-
tence in 3.25c. Reflexivization is restricted to clause
mates in English, pronouns take the accusative form in
object position and an underlying object becomes the surface
subject in passive sentences.

The sentences in 3.25, which have undergone RAIS-
ING-TO-OBJECT, have the acceptable corresponding gerundive
nominal complements in 3.27, but no acceptable correspond-
ing derived nominal complements, the forms in 3.28 being
unacceptable.

```
3.27a)  John's believing himself to be heroic
    b)  Bill's expecting them to be here soon
    c)  Dick's being believed by everyone to have been
            involved

3.28a)  *John's belief of himself to be heroic
    b)  *Bill's expectation of them to be here soon
    c)  *Dick's belief by everyone to have been involved
```

The sentences in 3.26, which have not undergone RAIS-
ING-TO-OBJECT, have the acceptable corresponding gerundive
nominal complements in 3.29 and derived nominal complements
in 3.30.

```
3.29a)  John's believing that he is heroic
    b)  Bill's expecting that they will be here soon
    c)  everyone's believing that Dick was involved

3.30a)  John's belief that he is heroic
    b)  Bill's expectation that they will be here soon
    c)  everyone's belief that Dick was involved
```

<u>RAISING-TO-SUBJECT</u>

The second movement is from subject of an embedded sen-
tence to subject of the next higher sentence, as has occurred

in the derivation of the sentences in 3.31, which are derived from the same underlying structures as the sentences in 3.32.

```
3.31a)   John is certain to win the prize.
    b)   Bill is likely to be drafted.
    c)   Jerry appeared to open the door.
```

```
3.32a)   It is certain that John will win the prize.
    b)   It is likely that Bill will be drafted.
    c)   It appeared that Jerry opened the door.
```

The sentences in 3.31, which have undergone RAISING-TO-SUBJECT, have the acceptable corresponding gerundive nominal complements in 3.33, but no acceptable corresponding derived nominal complements, the forms in 3.34 being unacceptable.

```
3.33a)   John's being certain to win the prize
    b)   Bill's being likely to be drafted
    c)   Jerry's appearing to open the door
```

```
3.34a)   *John's certainty to win the prize
    b)   *Bill's likelihood to be drafted
    c)   *Jerry's appearance to open the door[7]
```

The sentences in 3.32, which have not undergone RAISING-TO-SUBJECT, have the acceptable corresponding gerundive nominal complements in 3.35.[8]

```
3.35a)   it(s) being certain that John will win the prize
    b)   it(s) being likely that Bill will be drafted
    c)   it(s) appearing that Jerry opened the door
```

The apparently corresponding derived nominal complements in 3.36 are not acceptable, but the derived nominal complements in 3.37, which have the same word order as the sentences in 3.32, but do not have any reflex of _it_, are acceptable.

```
3.36a)  *its certainty that John will win the prize
    b)  *its likelihood that Bill will be drafted
    c)  *its appearance that Jerry opened the door

3.37a)   the certainty that John will win the prize
    b)   the likelihood that Bill will be drafted
    c)   the appearance that Jerry opened the door
```

I will argue below (cf. <u>Dummy Subject Insertion</u>) that <u>it</u> in sentences like those in 3.32 is inserted, and not present in underlying structures. The unacceptability of the forms in 3.36, and the acceptability of the forms in 3.37 is simply explained by blocking <u>IT</u>-INSERTION in derived nominal complements.

TOUGH-<u>MOVEMENT</u>

The third RAISING movement is from object of an embedded sentence to subject of the next higher sentence, as has occurred in the derivation of the sentences in 3.38, which are derived from the same underlying structures as the sentences in 3.39.

```
3.38a)  John is easy to please.
    b)  Algebra is difficult to learn.
    c)  This test is fun to take.

3.39a)  It is easy to please John.
    b)  It is difficult to learn algebra.
    c)  It is fun to take this test.
```

The sentences in 3.38, which have undergone <u>TOUGH</u>-MOVE-MENT, have the acceptable corresponding gerundive nominal complements in 3.40, but no acceptable corresponding derived nominal complements, the forms in 3.41 being unacceptable.

```
3.40a)  John's being easy to please
    b)  algebra's being difficult to learn
    c)  this test's being fun to take
```

3.41a) *John's easiness to please
b) *algebra's difficulty to learn
c) *this test's fun to take

The sentences in 3.39, which have not undergone
TOUGH-MOVEMENT, have the acceptable corresponding gerundive
nominal complements in 3.42.

3.42a) it(s) being easy to please
b) it(s) being difficult to learn algebra
c) it(s) being fun to take this test

The apparently corresponding derived nominal complements
in 3.43 are not acceptable, but those in 3.44 are acceptable.[9]
The argument used with the examples in 3.36 and 3.37 applies
here as well.

3.43a) *its easiness to please John
b) *its difficulty to learn algebra
c) *its fun to take this test

3.44a) ?the easiness of pleasing John
b) the difficulty of learning algebra
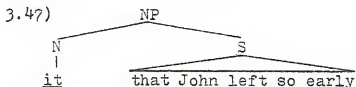c) the fun of taking this test

RAISING-TO-OBJECT, RAISING-TO-SUBJECT and TOUGH-MOVE-
MENT do not apply in the derivation of derived nominal com-
plements. The three rules share the property of moving a
noun phrase to a higher sentence. They appear to apply at
the same point in the cycle.[10] G. Lakoff (1968) has argued
that there is only one rule of RAISING (IT-REPLACEMENT in
his paper). To collapse the three types of RAISING to one,
Lakoff has to write a complex rule, which includes simul-
taneous structural descriptions. I consider such a rule to
be unlikely in a natural language. I will, therefore, sus-
pend judgment on whether it is possible to collapse the
RAISING rules.

IT-EXTRAPOSITION

Introduction

The rule of IT-EXTRAPOSITION was proposed by Rosenbaum (1967) to account for the relationship of sentences like those in 3.45 to the sentences in 3.46.[11]

3.45a) That John left so early is surprising.
    b) For John to quit now would be a disaster.
    c) That Mary will come to her senses is to be
        hoped for.

3.46a) It is surprising that John left so early.
    b) It would be a disaster for John to quit now.
    c) It is to be hoped for that Mary will come to
        her senses.

In Rosenbaum's analysis, the subject it in the sentences in 3.46 is present in deep structure as the head noun of noun phrases with the structure of 3.47. The rule of IT-EX-TRAPOSITION is given in 3.48.

3.47)

3.48) IT-EXTRAPOSITION   (Optional)

$$X \quad \underset{1}{\underset{[+PRO(\text{i.e. } \underline{it})]}{N}} \quad \underset{3}{S} \quad \underset{4}{Y} \quad \Longrightarrow \quad 1, 2, \emptyset, 4+3$$

If IT-EXTRAPOSITION does not apply, the head pronoun it is deleted. If IT-EXTRAPOSITION does apply, moving the embedded sentence to the right end of the next higher sentence, the head pronoun it is isolated in subject position, and no longer subject to deletion.

In this section I will first discuss the derivation of certain examples via the rule of IT-EXTRAPOSITION, showing

that the pattern of occurrence of derived nominal comple-
ments casts doubt on the validity of IT-EXTRAPOSITION as pro-
posed by Rosenbaum. I will then consider other evidence
counter to his analysis, and argue that there is no rule of
IT-EXTRAPOSITION in English grammar. In a later section
(cf. NP-PREPOSING) I will present an alternate analysis of
the relationship between the sentences in 3.45 and 3.46.

With Subjects of Predicate Adjectives

We have seen above that sentences like those in 3.49
have acceptable corresponding gerundive nominal complements,
as in 3.50, and derived nominal complements, as in 3.51.

```
3.49a)  It is certain that John will win the prize.
    b)  It is difficult to learn algebra.
    c)  It is fun to take this test.

3.50a)  it(s) being certain that John will win the prize
    b)  it(s) being difficult to learn algebra
    c)  it(s) being fun to take this test

3.51ai)   the certainty that John will win the prize
    ii)   the certainty of John's winning the prize
    b)    the difficulty of learning algebra
    c)    the fun of taking this test
```

According to Chomsky's (1970) analysis, the sentences
in 3.49 are derived from the phrase markers underlying the
sentences in 3.52 by the rule of IT-EXTRAPOSITION. The sen-
tences in 3.52 do not have acceptable corresponding gerund-
ive nominal complements or derived nominal complements, as
is shown by the unacceptability of the expected forms in
3.53 and 3.54.

```
3.52ai)  That John will win the prize is possible.
    ii)  John's winning the prize is certain.
    bi)  To learn algebra is difficult.
    ii)  Learning algebra is difficult.
```

3.52ci) To take this test is fun.
     ii) Taking this test is fun.

3.53ai) *that John will win the prize's being certain
     ii) *John's winning the prize's being certain
     bi) *to learn algebra's being difficult
     ii) *learning algebra's being difficult
     ci) *to take this test's being fun
     ii) *taking this test's being fun

3.54ai) *that John will win the prize's certainty
     ii) *John's winning the prize's certainty
     bi) *to learn algebra's difficulty
     ii) *learning algebra's difficulty
     ci) *to take this test's fun
     ii) *taking this test's fun

The Lexical Hypothesis predicts that there should be
derived nominal complements corresponding to the sentences
in 3.52, which are supposedly closer to base phrase markers
than the extraposed sentences in 3.49, but the unacceptabi-
lity of the strings in 3.53 and 3.54, in contrast to the
acceptability of the nominal complements in 3.50 and 3.51,
is counter to that prediction.[12]

With Passives

By Rosenbaum's analysis, IT-EXTRAPOSITION also applies
to passive sentences with complements in the derived subject
position. Thus, the extraposed sentences in 3.55 are
derived from the phrase markers underlying the passive sen-
tences in 3.56. The sentences in 3.56 do not have any accep-
table corresponding derived nominal complements, the expec-
ted forms in 3.57 being unacceptable, but the extraposed pas-
sive sentences in 3.55 have the corresponding derived nomi-
nal complements in 3.58.

3.55a) It was discovered by John that Jerry was a
            bigamist.
     b) It is doubted by them that you will go.

3.56a) That Jerry was a bigamist was discovered by John.
   b) That you will go is doubted by them.

3.57a) *that Jerry was a bigamist's discovery by John
   b) *that you will go's doubting by them

3.58a) the discovery by John that Jerry was a bigamist
   b) the doubting by them that you will go

Chomsky suggests that derived nominal complements such as those in 3.59 are derived by the obligatory application of a rule called AGENT-POSTPOSING (cf. Passive Sentences below) to the underlying noun phrases in 3.60.

3.59a) the necessity for John to leave
   b) the likelihood that John will leave

3.60a) $[_S$for John to leave$]_S$'s necessity

   b) $[_S$that John will leave$]_S$'s likelihood

This solution will explain why the examples in 3.51 and 3.59 are acceptable while those in 3.53 and 3.54 are not. AGENT-POSTPOSING seems to be a poor name for a rule which moves complements in such structures, however, and there is a curious problem with forms like those in 3.57 and 3.58. If the fact that the derived nominal complements in 3.58 are acceptable but not those in 3.57 is to be explained by the ad hoc obligatory application of AGENT-POSTPOSING, we are left with the problem of accounting for the post-verbal by-phrases in 3.58. I must reject Chomsky's implied claim that AGENT-POSTPOSING has applied in the derivations of the derived nominal complements in 3.58, but not in those in 3.59, and in so doing, reject his claim that AGENT-POSTPOS-ING moves any complement within derived nominal complements.

With Psychological Predicates

IT-EXTRAPOSITION can also apply to sentences like those in 3.61. These are active sentences with complements as subjects. The verbs which permit this construction share a number of other characteristics, and will be called psychological predicates here (cf. Postal, 1971:39-54, and the section Psychological Predicates, below). The sentences in 3.61 are subject to IT-EXTRAPOSITION in Rosenbaum's analysis, yielding the sentences in 3.62.

3.61a) That John is here surprises me.
    b) For Mary to be so late worries Bill.
    c) For Jim to leave now would disturb Alice.

3.62a) It surprises me that John is here.
    b) It worries Bill for Mary to be so late.
    c) It would disturb Alice for Bill to leave now.

Neither the sentences in 3.61 nor the sentences in 3.62 have acceptable corresponding derived nominal complements, as shown by the unacceptable forms in 3.63 and 3.64, and there are no acceptable derived nominal complements with determiners which are not possessive nouns corresponding to the extraposed sentences in 3.61, as is shown by the unacceptable examples in 3.65.

3.63a) *that John is here's surprise to me
    b) *for Mary to be so late's worry to Bill
    c) *for Jim to leave now's disturbance of Alice

3.64a) *its surprise to me that John is here
    b) *its worry to bill for Mary to be so late
    c) *its disturbance of Alice for Bill to leave now

3.65a) *the surprise to me that John is here
    b) *the worry to Bill for Mary to be so late
    c) *the disturbance of Alice for Bill to leave now

Psychological predicates appear to be the only predicates which form extraposed sentences which do not have acceptable corresponding derived nominal complements.

Further Problems with the Rule

The acceptable derived nominal complements in 3.51, 3.58 and 3.59 all show the same order of major constituents as the extraposed sentences in 3.46, 3.49 and 3.55. There is no subject pronoun _it_ in these derived nominal complements. This fact can be explained by having _it_ in extraposed sentences supplied by a rule of IT-INSERTION, which does not apply to derived nominal complements (cf. _Dummy Subject Insertion_, below). The arguments for not having _it_ present in deep structure are well summarized in Stockwell et al. (1973:527ff.). Given the absence of _it_ in underlying structures, the derived nominal complements in 3.51, 3.58 and 3.59 may be taken as corresponding directly to the extraposed sentences cited above. If Chomsky's claim that derived nominal complements correspond only to base phrase markers is at all correct, then extraposed sentences would appear to be more basic than nonextraposed sentences.

Although this conclusion goes against a generally accepted analysis, there is some independent supporting evidence. The intransitive verbs _seem_, _appear_ and _happen_ take subject complements which must be extraposed.[13] The extraposed sentences in 3.66 are acceptable while the nonextraposed ones in 3.67 are not.

3.66a) It seems that John is late.
    b) It appears that Mildred has fallen down.
    c) It happens that Mike is a brilliant student.

3.67a) *That John is late seems.
    b) *That Mildred has fallen down appears.
    c) *That Mike is a brilliant student happens.

It would seem that at least some sentences can be
derived only by obligatory application of IT-EXTRAPOSITION.
I have noted above in Chapter One certain arguments for
assuming an underlying predicate-initial order in English.
All extraposed sentences, including those resulting from the
obligatory application of IT-EXTRAPOSITION, have a predi-
cate-initial order, if the presence of the semantically
empty pronoun it in subject position is discounted. I pro-
pose that there is no rule of IT-EXTRAPOSITION in English,
and that nonextraposed sentences are derived from the struc-
tures underlying extraposed sentences. I will discuss the
details of such derivations in the section on NP-PREPOSING
below.

Passive Sentences

I will turn next to a problem which is not raised by
Chomsky's examples; that of derived nominal complements cor-
responding to passive sentences. The sentences in 3.68 have
the corresponding gerundive nominal complements in 3.69 and
derived nominal complements in 3.70.

3.68a) John refused the offer.
    b) John criticized the book.
    c) The enemy destroyed the city.
    d) The jury acquitted Abby.

3.69a) John's refusing the offer
    b) John's criticizing the book

3.69c) the enemy's destroying the city
     d) the jury's acquitting Abby

3.70a) John's refusal of the offer
    b) John's criticism of the book
    c) the enemy's destruction of the city
    d) the jury's acquittal of Abby

The sentences in 3.68 also have the corresponding passive sentences in 3.71.

3.71a) The offer was refused by John.
    b) The book was criticized by John.
    c) The city was destroyed by the enemy.
    d) Abby was acquitted by the jury.

The passive sentences in 3.71 have the corresponding gerundive nominal complements in 3.72, but only the sentences in 3.71c and d have the corresponding derived nominal complements in 3.73c and d, while the strings in 3.73a and b, which seem to correspond to the sentences in 3.71a and b, are not acceptable.

3.72a) the offer's being refused by John
    b) the book's being criticized by John
    c) the city's being destroyed by the enemy
    d) Abby's being acquitted by the jury

3.73a) *the offer's refusal by John
    b) *the book's criticism by John
    c) the city's destruction by the enemy
    d) Abby's acquittal by the jury

The derived nominal complements in 3.74, all of which are acceptable, are related to the derived nominal complements in 3.70 and 3.73, but do not correspond exactly to any sentences. These derived nominal complements would correspond to predicate-initial underlying structures.

3.74a) the refusal of the offer by John
    b) the criticism of the book by John
    c) the destruction of the city by the enemy
    d) the acquittal of Abby by the jury

Chomsky's claim that derived nominal complements corres-
pond only to base phrase markers creates a problem here if a
predicate-initial analysis is not adopted. Not only are
there derived nominal complements corresponding to active
sentences, as in 3.70, there are also derived nominal comple-
ments corresponding to some, but not all, passive sentences,
as in 3.73, and there are derived nominal complements which
do not correspond to any sentences at all (what might be
called "half-passives"), as in 3.74.

Chomsky (1970:202ff.) proposes two transformations
which must both apply in the derivation of passive sentences
from phrase markers parallel to those underlying active sen-
tences, one of which also can apply to noun phrases (includ-
ing derived nominal complements). Chomsky proposes a rule
of NP-PREPOSING which will transform phrases like those in
3.75 into phrases like those in 3.76. This rule thus applies
to noun phrases whether they have a simple noun or a derived
nominal as their head.

3.75a) the picture of John
     b) the bottom of the barrel
     c) the destruction of the city
     d) the murder of John

3.76a) John's picture
     b) the barrel's bottom   (the literal meaning)
     c) the city's destruction
     d) John's murder

There are similar phrases which do not undergo the rule
of NP-PREPOSING, and again the phrases can have either a sim-
ple noun or a derived nominal as their head. The phrases in
3.77 do not have acceptable corresponding forms like those
in 3.78.

3.77a) the algebra of revolution
    b) the strategy of war
    c) the refusal of the offer
    d) the criticism of the book

3.78a) *revolution's algebra
    b) *war's strategy
    c) *the offer's refusal
    d) *the book's criticism

Chomsky proposed a rule of AGENT-POSTPOSING to move the subject noun phrase to a post-verbal position in phrase markers which are to become passive sentences. NP-PREPOSING would then apply to move the object noun phrase into pre-verbal position. Chomsky goes on to say that since passivizability is a property of verbs (i.e., is a governed process), then derived nominal complements containing nominals corresponding to such verbs can also be passivized. It would seem that the passivizability of a verb is best expressed by having AGENT-POSTPOSING apply optionally to structures with verbs which can appear in passive sentences. That is, verbs which can appear in passive sentences are marked as allowing the optional application of AGENT-POSTPOSING, while verbs which cannot appear in passive sentences are marked as not allowing the application of AGENT-POSTPOSING. On the other hand, NP-PREPOSING applies obligatorily in the derivation of any sentence in which AGENT-POSTPOSING has already applied, and optionally in the derivation of any noun phrase (including derived nominal complements) whose head noun (or nominal) is marked as allowing the rule. A given lexical entry may therefore be marked differently for AGENT-POST-POSING and for NP-PREPOSING.

I will claim here that there is a rule of AGENT-PREPOS-
ING (the reverse of Chomsky's AGENT-POSTPOSING) which
applies to predicate-initial underlying structures to yield
active sentences and nominal complements such as those in
3.68, 3.69 and 3.70. If AGENT-PREPOSING does not apply,
then the resulting obligatory application of NP-PREPOSING
gives the passive sentences and gerundive nominal comple-
ments in 3.71 and 3.72. If AGENT-PREPOSING does not apply
in the derivation of derived nominal complements, then
NP-PREPOSING applies optionally with some underlying verbs,
giving the pairs of derived nominal complements in 3.73c
and d and 3.74c and d, and not at all with other verbs,
giving the derived nominal complements in 3.74a and b.

By Chomsky's analysis, passive sentences are derived
from structures underlying active sentences by the applica-
tion of two rules, both of which must apply. By my analysis,
all sentences are derived from underlying predicate-initial
structures, with active sentences derived by one rule and
passive sentences by another rule.

<div align="center">NP-PREPOSING</div>

With Simple Noun Phrases

The application of AGENT-PREPOSING to underlying pre-
dicate-initial structures with agents yields active sen-
tences like those in 3.79, and their corresponding gerundive
nominal complements in 3.80 and derived nominal complements
in 3.81.

3.79a) The enemy destroyed the city.
    b) The jury acquitted Abby.
    c) John refused the offer.
    d) John criticized the book.

3.80a) the enemy's destroying the city
    b) the jury's acquitting Abby
    c) John's refusing the offer
    d) John's criticizing the book

3.81a) the enemy's destruction of the city
    b) the jury's acquittal of Abby
    c) John's refusal of the offer
    d) John's criticism of the book

If AGENT-PREPOSING does not apply to the structures underlying the active sentences and nominal complements in 3.79, 3.80 and 3.81, then the rule of NP-PREPOSING applies obligatorily in the derivation of passive sentences and gerundive nominal complements like those in 3.82 and 3.83.

3.82a) The city was destroyed by the enemy.
    b) Abby was acquitted by the jury.
    c) The offer was refused by John.
    d) The book was criticized by John.

3.83a) the city's being destroyed by the enemy
    b) Abby's being acquitted by the jury
    c) the offer's being refused by John
    d) the book's being criticized by John

Either AGENT-PREPOSING or NP-PREPOSING must apply in the derivation of sentences and gerundive nominal complements. Forms like those in 3.84 and 3.85, in which neither rule has applied, are not acceptable.

3.84a) *Was destroyed the city by the enemy.
    b) *Was acquitted Abby by the jury.
    c) *Was refused the offer by John.
    d) *Was criticized the book by John.

3.85a) *being destroyed the city by the enemy
    b) *being acquitted Abby by the jury
    c) *being refused the offer by John
    d) *being criticized the book by John

On the other hand, in the derivation of derived nominal complements, if AGENT-PREPOSING does not apply, then the application of NP-PREPOSING is optional for some nominals (or underlying verbs), giving the paired acceptable derived nominal complements in 3.86a and b and 3.87a and b, and blocked for other nominals, so that the derived nominal complements in 3.87c and d are acceptable, but not those in 3.86c and d.

    3.86a) the city's destruction by the enemy
       b) Abby's acquittal by the jury
       c) *the offer's refusal by John
       d) *the book's criticism by John

    3.87a) the destruction of the city by the enemy
       b) the acquittal of Abby by the jury
       c) the refusal of the offer by John
       d) the criticism of the book by John

If there is no specified agent noun phrase in an underlying structure, then NP-PREPOSING applies obligatorily in the derivation of sentences, as in 3.88, and gerundive nominal complements, as in 3.89, with the forms in 3.90 and 3.91 being unacceptable.

    3.88a) The city was destroyed.
       b) Abby was acquitted.
       c) The offer was refused.
       d) The book was criticized.

    3.89a) the city's being destroyed
       b) Abby's being acquitted
       c) the offer's being refused
       d) the book's being criticized

    3.90a) *Was destroyed the city.
       b) *Was acquitted Abby.
       c) *Was refused the offer.
       d) *Was criticized the book

    3.91a) *being destroyed the city
       b) *being acquitted Abby
       c) *being refused the offer
       d) *being criticized the book

Again, when AGENT-PREPOSING has not applied in the derivation of a derived nominal complement, the application of NP-PREPOSING is optional for some nominals and blocked for others, as indicated by the derived nominal complements in 3.92 and 3.93.

3.92a) the city's destruction
    b) Abby's acquittal
    c) *the offer's refusal
    d) *the book's criticism

3.93a) the destruction of the city
    b) the acquittal of Abby
    c) the refusal of the offer
    d) the criticism of the book

Finally, if the underlying predicate-initial structure contains an intransitive predicate, then NP-PREPOSING applies obligatorily in the derivation of sentences like those in 3.94 and gerundive nominal complements like those in 3.95, with the forms in 3.96 and 3.97 being unacceptable.

3.94a) The boat sank suddenly.
    b) John arrived.
    c) Mary is kind.
    d) Bill is friendly.

3.95a) the boat's sinking suddenly
    b) John's arriving
    c) Mary's being kind
    d) Bill's being friendly

3.96a) *Sank the boat suddenly.
    b) *Arrived John.
    c) *Is kind Mary.
    d) *Is friendly Bill.

3.97a) *sinking the boat suddenly
    b) *arriving John
    c) *being kind Mary
    d) *being friendly Bill

Again, the application of NP-PREPOSING in the derivation of derived nominal complements corresponding to

intransitive sentences is optional, so that the derived nom-
inal complements in 3.98 and 3.99 are acceptable.

    3.98a) the boat's sudden sinking
       b) John's arrival
       c) Mary's kindness
       d) Bill's friendliness

    3.99a) the sudden sinking of the boat
       b) the arrival of John
       c) the kindness of Mary
       d) the friendliness of Bill

The application of NP-PREPOSING to simple noun phrases
shows a simple pattern. If there is no noun phrase in sub-
ject position when NP-PREPOSING is applicable (as is the
case with all intransitive predicates, transitive verbs with
unspecified agents and transitive verbs with specified
agents to which AGENT-PREPOSING has not applied), then
NP-PREPOSING moves the underlying object noun phrase into
subject position. This movement is obligatory in the deri-
vation of sentences and gerundive nominal complements and
optional in the derivation of derived nominal complements
(with the exception that certain nominals corresponding to
transitive verbs block the application of the rule in
derived nominal complements).

With Nominal Complements

As I indicated in Chapter One, I have accepted Menzel's
(1969) analysis of nominal complements as complements of a
restricted set of head nouns in underlying structures.
These head nouns are optionally deletable, and in the follow-
ing examples will be enclosed in parentheses to indicate
this optionality.

Again, I will claim that AGENT-PREPOSING has applied to predicate-initial underlying structures to yield the sentences in 3.100, and their corresponding gerundive nominal complements in 3.101 and derived nominal complements in 3.102.

3.100a) John complained about Peter's (action of) insulting Tom.
     b) Jerry testified about Bill's (action of) leaving Peggy.
     c) Mike attested to (the fact of) Mary's participation in the crime.
     d) David reported on (the event of) Alice's disappearance.

3.101a) John's complaining about Peter's (action of) insulting Tom
     b) Jerry's testifying about Bill's (action of) leaving Peggy
     c) Mike's attesting to (the fact of) Mary's participation in the crime
     d) David's reporting on (the event of) Alice's disappearance

3.102a) John's complaint about Peter's (action of) insulting Tom
     b) Jerry's testimony about Bill's (action of) leaving Peggy
     c) Mike's attestation to (the fact of) Mary's participation in the crime
     d) David's report on (the event of) Alice's disappearance

The verbs <u>complain about</u>, <u>attest to</u> and <u>report on</u> allow passivization in my dialect, while <u>testify about</u> does not. That is, AGENT-PREPOSING applies optionally to the first three predicates and obligatorily to <u>testify about</u> in the derivation of sentences. If AGENT-PREPOSING does not apply, then NP-PREPOSING must apply to yield sentences like those in 3.103. The expected corresponding gerundive nominal complements in 3.104 and derived nominal complements in 3.105 are not acceptable (cf. Note 12 above).

3.103a) Peter's (action of) insulting Tom was com-
               plained about by Tom.
      b) *Bill's (action of) leaving Peggy was testified
               about by Jerry.
      c) (The fact of) Mary's participation in the
               crime was attested to by Mike.
      d) (The event of) Alice's disappearance was
               reported on by David.

3.104a) *Peter's (action of) insulting Tom's being
               complained about by John
      b) *Bill's (action of) leaving Peggy's being
               testified about by Jerry
      c) *(the fact of) Mary's participation in the
               crime's being attested to by Mike
      d) *(the event of) Alice's disappearance's being
               reported on by David

3.105a) *Peter's (action of) insulting Tom's complaint
               about by John
      b) *Bill's (action of) leaving Peggy's testimony
               about by Jerry
      c) *(the fact of) Mary's participation in the
               crime's attestation to by Mike
      d) *(the event of) Alice's disappearance's report
               on by David

Failure of both AGENT-PREPOSING and NP-PREPOSING to

apply in the derivation of sentences and gerundive nominal

complements results in unacceptable forms, as in 3.106 and

3.107, but derived nominal complements to which neither rule

has applied are acceptable, including one with _testimony_

about (from _testify about_), as in 3.108.

3.106a) *Was complained about by John Peter's (action
               of) insulting Tom.
      b) *Was testified about by Jerry Bill's (action
               of) leaving Peggy.
      c) *Was attested to by Mike (the fact of) Mary's
               participation in the crime.
      d) *Was reported on by David (the event of)
               Alice's disappearance.

3.107a) *being complained about by John Peter's (action
               of) insulting Tom
      b) *being testified about by Jerry Bill's (action
               of) leaving Peggy

3.107c) *being attested to by Mike (the fact of) Mary's
participation in the crime
d) *being reported on by David (the event of)
Alice's disappearance

3.108a) the complaint by John about Peter's (action
of) insulting Tom
b) the testimony by Jerry about Bill's (action
of) leaving Peggy
c) the attestation by Mike to (the fact of)
Mary's participation in the crime
d) the report by David on (the event of) Alice's
disappearance

While the head nouns of the embedded nominal comple-

ments in the examples above may be deleted, they may not be

separated from the complements, i.e., by moving the head

nouns into surface subject position but leaving the comple-

ments at the right end of the structure (cf. <u>With</u> That-<u>Com</u>-

<u>plements</u>, below), so that all of the examples in 3.109,

3.110 and 3.111 are unacceptable.

3.109a) *Peter's action was complained about by John of
insulting Tom.
b) *Bill's action was testified about by Mike of
leaving Alice.
c) *The fact was attested to by Mike of Mary's
participation in the crime.
d) *The event was reported on by David of Alice's
disappearance.

3.110a) *Peter's action's being complained about by
John of insulting Tom
b) *Bill's action's being testified about by Jerry
of leaving Peggy
c) *the fact's being attested to by Mike of Mary's
participation in the crime
d) *the event's being reported on by David of
Alice's disappearance

3.111a) *Peter's action's complaint by John about
insulting Tom
b) *Bill's action's testimony by Jerry about
leaving Peggy
c) *the fact's attestation by Mike to Mary's par-
ticipation in the crime
d) *the event's report by David on Alice's dis-
appearance

Like <u>destroy</u>, <u>acquit</u>, <u>refuse</u> and <u>criticize</u>, the predicates <u>complain about</u>, <u>attest to</u> and <u>report on</u> also form agentless passives. Again, AGENT-PREPOSING does not apply to underlying structures with unspecified agents. Thus, NP-PREPOSING must apply in the derivation of sentences, as in 3.112, but does not apply in the derivation of gerundive and derived nominal complements, so that the forms in 3.113 and 3.114 are not acceptable.

3.112a) Peter's (action of) insulting Tom was complained about.
    b) (The fact of) Mary's participation in the crime was attested to.
    c) (The event of) Alice's disappearance was reported on.

3.113a) *Peter's (action of) insulting Tom's being complained about
    b) *(the fact of) Mary's participation in the crime's being attested to
    c) *(the event of) Alice's disappearance's being reported on

3.114a) *Peter's (action of) insulting Tom's complaint about
    b) *(the fact of) Mary's participation in the crime's attestation to
    c) *(the event of) Alice's disappearance's report on

Failure of both AGENT-PREPOSING and NP-PREPOSING to apply in the derivation of sentences and gerundive nominal complements results in unacceptable forms, as in 3.115 and 3.116, but derived nominal complements to which neither rule has applied, as in 3.117, are acceptable.

3.115a) *Was complained about Peter's (action of) insulting Tom.
    b) *Was attested to (the fact of) Mary's participation in the crime.
    c) *Was reported on (the event of) Alice's disappearance.

3.116a) *being complained about Peter's (action of)
          insulting Tom
     b) *being attested to (the fact of) Mary's parti-
          cipation in the crime
     c) *being reported on (the event of) Alice's
          disappearance

3.117a) the complaint about Peter's (action of)
          insulting Tom
     b) the attestation to (the fact of) Mary's
          participation in the crime
     c) the report on (the event of) Alice's dis-
          appearance

Again, while the head nouns of the embedded nominal com-

plements in the examples above may be deleted, they may not

be separated from the complements, so that all the examples

in 3.118, 3.119 and 3.120 are unacceptable.

3.118a) *Peter's action was complained about of
          insulting Tom.
     b) *The fact was attested to of Mary's partici-
          pation in the crime.
     c) *The event was reported on of Alice's dis-
          appearance.

3.119a) *Peter's action's being complained about of
          insulting Tom
     b) *the fact's being attested to of Mary's parti-
          cipation in the crime
     c) *the event's being reported on of Alice's
          disappearance

3.120a) *Peter's action's complaint about insulting
          Tom
     b) *the fact's attestation to Mary's participa-
          tion in the crime
     c) *the event's report on Alice's disappearance

If the underlying predicate-initial structure contains

an intransitive predicate, then NP-PREPOSING applies obliga-

torily in the derivation of sentences, as in 3.121, but is

blocked from applying in the derivation of nominal comple-

ments, so that the forms in 3.122 and 3.123 are unacceptable.

3.121a) (The fact of) John's leaving so early was
            unexpected.
     b) Bill's (action of) refusing the offer is
            unfortunate.
     c) (The event of) Dick's resignation is likely.
     d) (The fact of) Jimmy's testimony was remarkable.

3.122a) *(the fact of) John's leaving so early's being
            unexpected
     b) *Bill's (action of) refusing the offer's being
            unfortunate
     c) *(the event of) Dick's resignation's being
            likely
     d) *(the fact of) Jimmy's testimony's being
            remarkable

3.123a) *(the fact of) John's leaving so early's
            unexpectedness
     b) *Bill's (action of) refusing the offer's
            unfortunateness
     c) *(the event of) Dick's resignation's likelihood
     d) *(the fact of) Jimmy's testimony's remarkableness

Failure of both AGENT-PREPOSING and NP-PREPOSING to

apply in the derivation of sentences and gerundive nominal

complements results in unacceptable forms, as in 3.124 and

3.125, but derived nominal complements to which neither rule

has applied, as in 3.126, are acceptable.

3.124a) *Was unexpected (the fact of) John's leaving
            so early.
     b) *Was unfortunate Bill's (action of) refusing
            the offer
     c) *Is likely (the event of) Dick's resignation.
     d) *Was remarkable (the fact of) Jimmy's testimony.

3.125a) *being unexpected (the fact of) John's leaving
            so early
     b) *being unfortunate Bill's (action of) refusing
            the offer
     c) *being likely (the event of) Dick's resignation
     d) *being remarkable (the fact of) Jimmy's testimony

3.126a) the unexpectedness of (the fact of) John's
            leaving so early
     b) the unforunateness of Bill's (action of)
            refusing the offer
     c) the likelihood of (the event of) Dick's
            resignation
     d) the remarkableness of (the fact of) Jimmy's
            testimony

Again, while the head nouns of the embedded nominal complements in the examples above may be deleted, they may not be separated from the complements, so that all the examples in 3.127, 3.128 and 3.129 are unacceptable.

3.127a) *The fact was unexpected of John's leaving so early.
   b) *Bill's action was unfortunate of refusing the offer.
   c) *The event was likely of Dick's resignation.
   d) *The fact was remarkable of Jimmy's testimony.

3.128a) *the fact's being unexpected of John's leaving so early
   b) *Bill's action's being unfortunate of refusing the offer
   c) *the event's being likely of Dick's resignation
   d) *the fact's being remarkable of Jimmy's testimony

3.129a) *the fact's unexpectedness of John's leaving so early
   b) *Bill's action's unfortunateness of refusing the offer
   c) *the event's likelihood of Dick's resignation
   d) *the fact's remarkableness of Jimmy's testimony

The examples above show that either AGENT-PREPOSING or NP-PREPOSING must apply in the derivation of sentences with embedded nominal complements, that the only acceptable gerundive nominal complements with embedded nominal complements are those to which AGENT-PREPOSING has applied, and that derived nominal complements with embedded nominal complements to which AGENT-PREPOSING has applied, as well as derived nominal complements with embedded nominal complements to which neither AGENT-PREPOSING nor NP-PREPOSING has applied, are acceptable. No other possibilities are acceptable, not is any case in which the head noun is separated from the embedded nominal complements.

With That-Complements

That-complements also appear to have head nouns in underlying structure (cf. Menzel, 1969). Like the head nouns of nominal complements, these head nouns are deletable. The optional presence of head nouns in surface structure will again be indicated by the use of parentheses.

As before, I will claim that AGENT-PREPOSING has applied to predicate-initial underlying structures to yield the sentences in 3.130, and their corresponding gerundive nominal complements in 3.131 and derived nominal complements in 3.132.

3.130a) Tom reported (the fact) that the account was overdrawn.
b) Jerry revealed (the fact) that Alice was smart.
c) Mary denied (the claim) that Peggy was pregnant.

3.131a) Tom's reporting (the fact) that the account was overdrawn
b) Jerry's revealing (the fact) that Alice was smart
c) Mary's denying (the claim) that Peggy was pregnant

3.132a) Tom's report (of the fact) that the account was overdrawn
b) Jerry's revelation (of the fact) that Alice was smart
c) Mary's denial (of the claim) that Peggy was pregnant

If AGENT-PREPOSING does not apply, then NP-PREPOSING applies obligatorily in the derivation of sentences. However, NP-PREPOSING applies in two ways. Either the head noun and the that-complement are preposed as a unit, as has happened in the derivation of the sentences in 3.133, or only the head noun is preposed, in which case the sentences in 3.134 result if the head noun is retained in surface

structure, and the sentences in 3.135 result if the head
noun is deleted.

3.133a) (The fact) that the account was overdrawn was
        reported by Tom.
    b) (The fact) that Alice was smart was revealed
        by Jerry.
    c) (The claim) that Peggy was pregnant was denied
        by Mary.

3.134a) The fact was reported by Tom that the account
        was overdrawn.
    b) The fact was revealed by Jerry that Alice was
        smart.
    c) The claim was denied by Mary that Peggy was
        pregnant.

3.135a) It was reported by Tom that the account was
        overdrawn.
    b) It was revealed by Jerry that Alice was smart.
    c) It was denied by Mary that Peggy was pregnant.

The sentences in 3.133 are passive. Sentences like
those in 3.134 have been described as being derived by the
rule of EXTRAPOSITION FROM NP (of which I will have more to
say below). The sentences in 3.135 are extraposed (i.e.,
supposedly derived by IT-EXTRAPOSITION).

In no case in which head nouns are retained in surface
structure are both the head noun and the that-complement to
the right of the predicate in sentences. Thus, there are no
acceptable sentences like those in 3.136.

3.136a) *It was reported by Tom the fact that the
        account was overdrawn.
    b) *It was revealed by Jerry the fact that Alice
        was smart.
    c) *It was denied by Mary the claim that Peggy
        was pregnant.

The sentences in 3.124 do not have any acceptable cor-
responding gerundive or derived nominal complements, the
forms in 3.137 and 3.138 all being unacceptable.

3.137a) *(the fact) that the account was overdrawn's
    being reported by Tom
    b) *(the fact) that Alice was smart's being
    revealed by Jerry
    c) *(the claim) that Peggy was pregnant's being
    denied by Mary

3.138a) *(the fact) that the account was overdrawn's
    report by Tom
    b) *(the fact) that Alice was smart's revelation
    by Jerry
    c) *(the claim) that Peggy was pregnant's denial
    by Mary

The sentences in 3.134 do not have any acceptable cor-

responding gerundive or derived nominal complements, the

forms in 3.139 and 3.140 all being unacceptable.

3.139a) *the fact's being reported by Tom that the
    account was overdrawn
    b) *the fact's being revealed by Jerry that Alice
    was smart
    c) *the claim's denial by Mary that Peggy was
    pregnant

3.140a) *the fact's report by Tom that the account was
    overdrawn
    b) *the fact's revelation by Jerry that Alice was
    smart
    c) *the claim's denial by Mary that Peggy was
    pregnant

The sentences in 3.135 have the acceptable corresponding

gerundive nominal complements in 3.141 and derived nominal

complements in 3.142.

3.141a) its being reported by Tom that the account
    was overdrawn
    b) its being revealed by Jerry that Alice was
    smart
    c) it being denied by Mary that Peggy was
    pregnant

3.142a) the report by Tom that the account was over-
    drawn
    b) the revelation by Jerry that Alice was smart
    c) the denial by Mary that Peggy was pregnant

Finally, although the sentences in 3.136, and their expected corresponding gerundive nominal complements in 3.143, are all unacceptable, the derived nominal complements in 3.144, with the same linear order as the forms in 3.136 and 3.143, are acceptable.

3.143a) *its being reported by Tom the fact that the
account was overdrawn
    b) *its being revealed by Jerry the fact that
Alice was smart
    c) *its being denied by Mary the claim that Peggy
was pregnant

3.144a) the report by Tom of the fact that the account
was overdrawn
    b) the revelation by Jerry of the fact that
Alice was smart
    c) the denial by Mary of the claim that Peggy
was pregnant

By referring to the examples given for simple noun phrases and nominal complements, the reader should be able to convince himself that the patterns of acceptability exhibited for the examples with transitive predicates and specified agents given immediately above also hold for forms with transitive predicates and unspecified agents and for forms with intransitive predicates.

If we understand NP-PREPOSING to apply either to the head noun alone or to the head noun plus its _that_-comple- ment, we see that the rule has the same conditions on appli- cation to _that_-complements that it has to nominal comple- ments: it applies optionally in the derivation of sentences, and not at all in the derivation of derived nominal comple- ments. Acceptable gerundive nominal complements occur only if the head noun is deleted.

EXTRAPOSITION FROM NP

Ross (1967) proposed a rule, which he called EXTRAPOSI-
TION FROM NP, to account for the relationship of sentences
like those in 3.145 to sentences like those in 3.146.

3.145a) A gun which I had cleaned went off.
     b) He let the cats which were meowing out.
     c) He expected someone who I was acquainted with
         to show up.

3.146a) A gun went off which I had cleaned.
     b) He let the cats out which were meowing.
     c) He expected someone to show up who I was
         acquainted with.

Ross stated the rule in the form given in 3.147.
Although Ross does not state the rule in the context of the
cycle, the restrictions he gives on the forms of the varia-
ble Y indicate that the rule is cyclic.

3.147   EXTRAPOSITION FROM NP

$$\underbrace{X \quad {}_{NP}[{}_{NP} - S]_{NP}}_{1} - \underset{2}{S} - \underset{3}{Y} \overset{OPT}{\implies} 1, \emptyset, 3+2$$

EXTRAPOSITION FROM NP is not needed to account for the
relationship of the sentences in 3.145 to the sentences in
3.146 if NP-PREPOSING is stated to apply to such noun-rela-
tive clause combinations in the same manner as with _that_-com-
plements and their head nouns. Thus, NP-PREPOSING would

have preposed both the head noun and its relative clause in the sentences in 3.145, while it would have preposed only the head noun in the sentences in 3.146. The examples in 3.145 and 3.146 require a modification of the rule to allow preposing across the separable particle of a verb-particle predicate. This would, however, eliminate any need for a rule to postpose such separable particles across the object of the verb.

NP-PREPOSING and Pied Piping

In light of the behavior of NP-PREPOSING with that-complements and relative clauses, I will modify the rule so that it applies to the head noun of the structures in question, and allow the Pied Piping convention to account for the optional preposing of the that-complements and relative clauses with the head nouns. The Pied Piping convention is proposed by Ross (1967) to handle just such phenomena. The Pied Piping convention is as follows:[15]

> ### The Pied Piping Convention
> Any transformation which is stated in such a way as to effect the reordering of some specified node NP, where this node is preceded and followed by variables in the structural index of the rule, may apply to this NP or to any non-coordinate NP which dominates it, as long as there are no occurrences of any coordinate node, nor the node S, on the branch connecting the higher node and the specified node.

Ross further mentions that Pied Piping is obligatory in some contexts. The distributional facts discussed above are accounted for if NP-PREPOSING applies to head nouns, with Pied Piping being obligatory for nominal complements and optional for that-complements (and relative clauses).

Conditions on Application

The conditions on the application of NP-PREPOSING that
I have discussed above fall along two parameters. The con-
textual parameter opposes sentences and gerundive nominal
complements to derived nominal complements. The noun phrase
parameter opposes simple noun phrases to head nouns of com-
plements. The interaction of these parameters is indicated
in the chart in 3.148.

3.148 Conditions on the Application of NP-PREPOSING
       (AGENT-PREPOSING has not applied)

	in sentences and gerundive nomi- nal complements	in derived nomi- nal complements
simple noun phrases	obligatory	optional*
head nouns of complements	obligatory	blocked

*blocked for specific predicates

In Chapter Four I will argue that when NP-PREPOSING
applies in the derivation of gerundive nominal complements,
they are still sentences. Thus, NP-PREPOSING is obligatory
when it applies within structures dominated by an S. On the
other hand, I will argue that when NP-PREPOSING applies in
the derivation of derived nominal complements, they are
already nominalized. Thus, NP-PREPOSING is optional or
blocked when it applies within structures dominated by an
NP. I will have more to say about how this distinction is
achieved in Chapter Four.

Emonds' POSSESSIVE Transformation

Emonds (1969:78-81) argues that NP-PREPOSING does not
apply in the derivation of "passive" derived nominal comple-
ments such as those in 3.149.

3.149a) the city's destruction by the enemy
     b) Abby's acquittal by the jury

He argues that the possessive noun phrases the city's
and Abby's are preposed by a rule he calls the POSSESSIVE
Transformation. First he notes that NP-PREPOSING may pre-
pose a noun phrase over a verb-particle predicate, as in
3.150, but claims that the POSSESSIVE Transformation never
does, so that forms like that in 3.151 are blocked.

3.150) The strike was refered to briefly in the report.

3.151) *the strike's brief reference to in the report

Since many derived nominals idiosyncratically block
preposing of object noun phrases, the fact that verbs with
lexical prepositions also block preposing is weak evidence
for the separate existence of the POSSESSIVE Transformation.

A second reason Emonds gives for requiring as a sepa-
rate rule the POSSESSIVE Transformation is that NP-PREPOSING
is associated with the occurrence of the passive morpheme
be-en, which never appears in "passive" derived nominal com-
plements. As was mentioned in Chapter Two, derived nominal
complements never have any auxiliaries. All that is needed
is a simple rule or principle that insures that no auxiliar-
ies are present in the surface structures of derived nominal

complements. If it is assumed that auxiliaries are present
in deeply underlying structures, then they are deleted at
some point in the derivation of derived nominal complements.
If it is assumed that auxiliaries are inserted, then the
insertion rules are blocked from applying to derived nominal
complements. Thus, there will be no passive morpheme be-en
in "passive" derived nominal complements.

A third reason cited by Emonds is more complex. He
points out that the POSSESSIVE Transformation apparently can
apply to noun phrases other than the one immediately follow-
ing the derived nominal, whereas NP-PREPOSING (in sentences
and gerundive nominal complements) applies only to noun
phrases which immediately follow the predicate (or gerundive
nominal). That is, he claims that the POSSESSIVE Transforma-
tion can apply to noun phrases which are not objects of the
predicate. He cites the occurrence of prepositionless time
adverbials preceding the derived nominal, as in 3.152, which,
according to Emonds, represent derivations from the struc-
tures underlying the derived nominal complements in 3.153.

3.152a)   last week's discussion of novels by the
          librarian
     b)   this morning's speech to the nation by the
          president

3.153a)   the discussion of novels by the librarian
          last week
     b)   the speech to the nation by the president
          this morning

The application of NP-PREPOSING in this way is not possible in sentences, so that we find the sentences in 3.154, but the sentences in 3.155 are not acceptable.

3.154a) The librarian discussed novels last week.
    b) The president spoke to the nation this morning.

3.155a) *Last week was discussed novels by the librarian.
    b) *This morning was spoken to the nation by the president.

But it cannot be the POSSESSIVE Transformation which has moved the prepositionless time adverbials to a position preceding the derived nominals in 3.152, since the forms in 3.156 are not acceptable, indicating that the POSSESSIVE Transformation (or NP-PREPOSING) is blocked for discussion and speech in derived nominal complements.

3.156a) *novel's discussion by the librarian last week
    b) *the nation's speech by the president this morning

All time adverbials are subject to fronting in sentences, as in 3.157.

3.157a) Last week the librarian discussed novels.
    b) This morning the president spoke to the nation.

The application of a rule of ADVERB-FRONTING to the structures underlying the derived nominal complements in 3.153 (with subsequent addition of the suffix '_s_) will produce the derived nominal complements in 3.152.

Other time adverbials are also subject to ADVERB-FRONTING, but do not form determiners of derived nominals. The time adverbials with prepositions, however, are subject to deletion of the preposition, and then behave just like other

prepositionless time adverbials. Time adverbials with the
-ly suffix form pre-nominal adjectives just like other -ly
adverbs in derived nominal complements, as was discussed in
Chapter Two. Thus, the sentences in 3.158 have the corres-
ponding derived nominal complements in 3.159.

3.158a) Recently the librarian discussed novels.
     b) Daily the president speaks to the nation.

3.159a) the librarian's recent discussion of novels
     b) the president's daily speech to the nation

Emonds choice of the name POSSESSIVE for the rule which
preposes objects in derived nominal complements is unfortun-
ate. Last week and this morning in 3.152 were preposed by
ADVERB-FRONTING, and the librarian and the president in
3.159 were preposed by AGENT-PREPOSING, yet they also form
possessive determiners. The formation of a possessive is
obviously distinct from any preposing rule, and operates on
whatever noun phrase is in pre-nominal position at some late
point in the cycle.

The last reason Emonds cites for distinguishing the POS-
SESSIVE Transformation from NP-PREPOSING is that the condi-
tions for preposing are not the same in derived nominal com-
plements as they are in sentences and gerundive nominal com-
plements, as was indicated in 3.148. Since those conditions
do differ, there seems to be some merit in the proposal for
two rules. The two rules would have so much in common, how-
ever, that to say that they are unrelated would miss signifi-
cant generalizations. I therefore reject Emonds' claim, and
retain my earlier analysis of one rule of NP-PREPOSING with

conditions on application in derived nominal complements
which differ from those in sentences and gerundive nominal
complements.

Summary

I have argued in this section that the subjects of sen-
tences with intransitive verbs and the derived subjects of
passive sentences and their corresponding nominal comple-
ments are derived by the rule of NP-PREPOSING. I have fur-
ther argued that extraposed sentences and derived nominal
complements with nominal-initial order have resulted from
the failure of either AGENT-PREPOSING or NP-PREPOSING to
apply in their derivations. I have also argued that NP-PRE-
POSING may apply to structures consisting of a noun (phrase)
plus an embedded sentence, with the embedded sentence becom-
ing a nominal complement, a _that_-complement, or a relative
clause. This thus eliminates any need for the rules of
IT-EXTRAPOSITION and EXTRAPOSITION FROM NP. Finally, I
have examined, and rejected, arguments presented by Emonds
in support of his claim that NP-PREPOSING does not apply in
the derivation of derived nominal complements.

Dummy Subject Insertion

Newmeyer (1971) notes that there are no derived nominal
complements with _there_ as possessive noun determiner. The
sentences in 3.160 have the corresponding gerundive nominal
complements in 3.161, but there are no acceptable derived
nominal complements corresponding to the sentences in 3.160,
the forms in 3.162 being unacceptable.

```
3.160a)  There appeared to be no hope.
     b)  There seemed to be a disturbance.
     c)  There happened to be some wine in the bottle.

3.161a)  there appearing to be no hope16
     b)  there seeming to be a disturbance
     c)  there happening to be some wine in the bottle

3.162ai)  *there's appearance to be no hope17
     ii)  *there's appearance of being no hope
    bi)  *there's semblance to be a disturbance
     ii)  *there's semblance of being a disturbance
    ci)  *there's happening to be some wine in the
              bottle
     ii)  *there's happening of being some wine in the
              bottle
```

The forms in 3.162 do not provide any evidence of the

relation between THERE-INSERTION and DERIVED NOMINALIZATION,

however, as the sentences in 3.160 have been derived by RAIS-

ING-TO-SUBJECT from the structures underlying the sentences

in 3.163, which have the corresponding gerundive nominal com-

plements in 3.164 and derived nominal complements in 3.165.18

```
3.163a)  It appeared that there was no hope.
     b)  It seemed that there was a disturbance.
     c)  It happened that there was some wine in the
              bottle.

3.164a)  it(s) appearing that there was no hope
     b)  it(s) seeming that there was a disturbance
     c)  it(s) happening that there was some wine in
              the bottle

3.165a)  the appearance that there was no hope
     b)  ?the semblance that there was a disturbance
     c)  the happenstance that there was some wine in
              the bottle
```

If we take the embedded that-complements of the sen-

tences in 3.163, we have sentences in which there has not

been raised from an embedded sentence, as in 3.166. These

sentences have the corresponding gerundive nominal comple-

ments in 3.167. It would seem that the derived nominal

complements corresponding to the sentences in 3.166 are the
simple noun phrases in 3.168.

    3.166a) There was no hope.
        b) There was a disturbance.
        c) There was some wine in the bottle.

    3.167a) there being no hope
        b) there being a disturbance
        c) there being some wine in the bottle

    3.168a) no hope
        b) a disturbance
        c) some wine in the bottle

The sentences in 3.166 all have the surface structure
there-Copula-Predicate Nominal. THERE-INSERTION is presumed
to have applied in each sentence because no noun phrase was
left in subject position. In an analysis assuming underly-
ing SVO order, this requires the postposing of the subject
with certain intransitive verbs. In an analysis assuming
predicate-initial order, THERE-INSERTION applies in case no
other rule has moved a noun phrase into subject position.

In the section on IT-EXTRAPOSITION above I indicated
that it is inserted in subject position if no noun phrase or
complement is moved into subject position. I will claim
here that it is the surrogate subject if the predicate has a
sentential complement, or if the predicate is one which
takes no arguments (i.e., weather verbs such as rain, etc.),
and that there is the surrogate subject if the predicate
has at least one argument, but no sentential complement.

The derived nominal complements I have given in 3.168
are really just the noun phrases which occur as predicate
nominals in the sentences in 3.166. There are variants of

those sentences, as in 3.169, to which <u>THERE</u>-INSERTION has
not applied. These sentences have the corresponding gerund-
ive nominal complements in 3.170 and derived nominal compl-
ements in 3.171. The forms in 3.172, with the same word
order as the sentences in 3.169, are not acceptable.

3.169a) No hope existed.
     b) A disturbance occurred.
     c) Some wine was present in the bottle.

3.170a) no hope('s) existing
     b) a disturbance('s) occurring
     c) some wine('s) being present in the bottle

3.171a) the existance of no hope
     b) the occurrence of a disturbance
     c) the presence of some wine in the bottle

3.172a) *no hope's existance
     b) *a disturbance's occurrence
     ci) *some wine in the bottle's presence
     ii) *some wine's presence in the bottle

Certain points emerge with these examples. The occur-
rences of <u>be</u> in the sentences in 3.166 are not really the
copula, but rather an alternate representation of the exis-
tential verbs in 3.169. The only acceptable derived nominal
complements corresponding to the sentences in 3.169 show pre-
dicate-initial order. For this set of predicates, then,
NP-PREPOSING seems to apply optionally in sentences, and not
at all in derived nominal complements. This pattern is paral-
lel to the application of the rule with an embedded <u>that</u>-com-
plement.

THERE-INSERTION and <u>IT</u>-INSERTION are both blocked from
applying to derived nominal complements, and are both gov-
erned by very similar conditions. If no noun phrase precedes

the predicate because NP-PREPOSING has failed to apply, a
surrogate subject must be supplied. This is done by
THERE-INSERTION if the predicate belongs to the class of
existential predicates, and by IT-INSERTION if the predicate
has a sentential complement, or is a weather predicate. In
a derived nominal complement, no surrogate subject is sup-
plied by the grammar.

<div align="center">EQUI-NP-DELETION</div>

In this section I will discuss another problem which is
not raised by Chomsky (1970): the lack of derived nominal
complements in which EQUI-NP-DELETION has applied.

Stockwell et al. (1973:553ff.) present an analysis
which has EQUI-NP-DELETION apply when there is an Agent (of
the higher sentence)-subject (of the embedded sentence) iden-
tity or a Dative (of the higher sentence)-subject (of the
embedded sentence) identity, with the Dative-subject condi-
tion taking precedence over the Agent-subject condition.[19]
Stockwell et al. state that require takes an optional Dative
noun phrase with a sentential complement, with the applica-
tion of EQUI-NP-DELETION being optional if a Dative noun
phrase is present and identical to the subject of the embed-
ded sentence; that command takes an optional Dative noun
phrase with the application of EQUI-NP-DELETION being obli-
gatory if a Dative noun phrase is present and identical to
the subject of the embedded sentence; and that force takes
an obligatory Dative noun phrase with obligatory application
of EQUI-NP-DELETION if the Dative noun phrase is identical

to the subject of the embedded sentence. The case of
require without a Dative noun phrase is represented by
3.173a, require with a Dative noun phrase but without appli-
cation of EQUI-NP-DELETION by 3.173b, require with a Dative
noun phrase and application of EQUI-NP-DELETION by 3.173c,
command without a Dative noun phrase by 3.173d, command with
a Dative noun phrase by 3.173e, and force by 3.173f. The
failure of EQUI-NP-DELETION to apply for whatever reason pro-
duces that-complements from the embedded sentences, as in
3.173a, b and d. The sentences in 3.173 have corresponding
gerundive nominal complements, as in 3.174, but only 3.173a,
d and e have acceptable corresponding derived nominal comple-
ments, as indicated by the forms in 3.175.

    3.173a) I require that you solve the problem.
        b) I require of you that you solve the problem.
        c) I require you to solve the problem.
        d) I commanded that he solve the problem.
        e) I commanded him to solve the problem.
        f) I forced him to solve the problem.

    3.174a) my requiring that you solve the problem
        b) my requiring of you that you solve the problem
        c) my requiring you to solve the problem
        d) my commanding that he solve the problem
        e) my commanding him to solve the problem
        f) my forcing him to solve the problem

    3.175a) my requirement that you solve the problem
        b) *my requirement of you that you solve the problem
        c) *my requirement of you to solve the problem
        d) my command that he solve the problem
        e) my command to him to solve the problem
        f) *my forcing of him to solve the problem

There are no derived nominal complements corresponding
to sentences with require which have a Dative noun phrase
whether or not EQUI-NP-DELETION has applied to the sentence.

I have no explanation for this fact other than the sugges-
tion that some unknown rule has applied in the derivation of
the sentences in 3.173b and c which has not applied in the
derivation of the sentence in 3.173a, and that this unknown
rules blocks DERIVED NOMINALIZATION. On the other hand,
there are derived nominal complements corresponding to sen-
tences with <u>command</u> without regard to whether the sentences
have undergone EQUI-NP-DELETION. I will show below that
DERIVED NOMINALIZATION blocks the application of EQUI-NP-DE-
LETION for only some underlying predicates, so that there is
nothing troublesome about its failure to do so for <u>command</u>.
That the unacceptability of 3.175f is linked to the applica-
tion of EQUI-NP-DELETION is shown by the acceptability of
<u>my forcing of the issue</u> corresponding to <u>I forced the issue</u>,
which has not undergone EQUI-NP-DELETION. Thus, it is not
the case that DERIVED NOMINALIZATION is blocked idiosyncrati-
cally for <u>force</u>. The examples in 3.175 do not provide clear
evidence on the interaction of EQUI-NP-DELETION and DERIVED
NOMINALIZATION. To find such evidence we must turn to the
Agent-subject condition on EQUI-NP-DELETION.

The sentences in 3.176 result from the deletion of the
subject of the embedded sentence when it is identical to the
Agent noun phrase of the next higher sentence. The corres-
ponding gerundive nominal complements are given in 3.177.
There are no acceptable corresponding derived nominal com-
plements, the expected forms in 3.178 being unacceptable.

3.176a) John condescended to speak to Mary.
    b) Mike quickly learned to analyze sentences.
    c) Bill expected to leave early.

3.177a) John's condscending to speak to Mary
    b) Mike's quickly learning to analyze sentences
    c) Bill's expecting to leave early

3.178a) *John's condescension to speak to Mary
    b) *Mike's quick learning to analyze sentences
    c) *Bill's expectation to leave early

That the unacceptability of the forms in 3.178 is con-
nected with the application of EQUI-NP-DELETION is indicated
by the fact that the sentences in 3.179, with the same basic
predicates as in 3.176, have the corresponding gerundive
nominal complements in 3.180 and derived nominal complements
in 3.181.

3.179a) John was condescending towards Mary.
    b) Mike quickly learned the multiplication tables.
    c) Bill expected that Alice would leave.

3.180a) John's being condescending towards Alice
    b) Mike's quickly learning the multiplication
          tables
    c) Bill's expecting that Alice would leave

3.181a) John's condescension towards Mary
    b) Mike's quick learning of the multiplication
          tables
    c) Bill's expectation that Alice would leave

Other predicates allow the application of EQUI-NP-DELE-
TION in the derivation of derived nominal complements. The
sentences in 3.182, which have undergone EQUI-NP-DELETION in
their derivations, have the corresponding gerundive nominal
complements in 3.183 and derived nominal complements in 3.184.

3.182a) John intended to leave early.
    b) Mike desired to leave early.
    c) Bill refused to leave early.
    d) Jerry attempted to leave early.

3.183a) John's intending to leave early
    b) Mike's desiring to leave early
    c) Bill's refusing to leave early
    d) Jerry's attempting to leave early

3.184a) John's intention to leave early
    b) Mike's desire to leave early
    c) Bill's refusal to leave early
    d) Jerry's attempt to leave early

It appears from these examples that EQUI-NP-DELETION, like NP-PREPOSING, can apply to some derived nominal complements, but not to others. The applicability of EQUI-NP-DELETION seems to be governed by a feature on the predicate. That the conditions on applicability may be more complicated is indicated by the fact that while 3.178c, *Bill's expectation to leave early, seems hopelessly bad, the related form, Bill's expectation of an early departure, is much better. A further point is that in the derived nominal complements in 3.184, all of the derived nominals except refusal will also take embedded gerundive or derived nominal complements to which EQUI-NP-DELETION has applied, as in 3.185.

3.185a) John's intention of leaving early
    b) Mike's desire for leaving early/an early
            departure
    c) *Bill's refusal of leaving early/an early
            departure
    d) Jerry's attempt at leaving early/an early
            departure

These facts indicate a difference in the application of EQUI-NP-DELETION to derived nominal complements with embedded infinitival complements and to those with embedded gerundive or derived nominal complements. I will have more to say about that difference in Chapter Four.

DATIVE-MOVEMENT

Newmeyer (1971) points out that sentences which have undergone DATIVE-MOVEMENT in their derivations do not have corresponding derived nominal complements. The sentences in 3.186, which have undergone DATIVE-MOVEMENT, have the corresponding gerundive nominal complements in 3.187, but the expected corresponding derived nominal complements in 3.188 are not acceptable.

3.186a) John gave Mary the book.
    b) Bill told Alice the story.
    c) Jane bought Jim a soda.

3.187a) John's giving Mary the book
    b) Bill's telling Alice the story
    c) Jane's buying Jim a soda

3.188a) *John's gift to Mary of the book
    b) *Bill's telling to Alice of the story
    c) *Jane's buying for Jim of a soda

The sentences in 3.189, which have not undergone DATIVE-MOVEMENT, have the corresponding gerundive-nominal complements in 3.190 and derived nominal complements in 3.191. The nominal-initial derived nominal complements corresponding to this set of sentences are given in 3.192.

3.189a) John gave the book to Mary.
    b) Bill told the story to Alice.
    c) Jane bought a soda for Jim.

3.190a) John's giving the book to Mary
    b) Bill's telling the story to Alice
    c) Jane's buying a soda for Jim

3.191a) John's gift of the book to Mary
    b) Bill's telling of the story to Alice
    c) Jane's buying of a soda for Jim

3.192a) the gift of the book to Mary by John
    b) the telling of the story to Alice by Bill
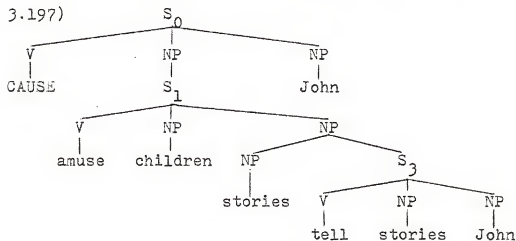   c) the buying of a soda for Jim by Jane

Psychological Predicates

Chomsky presents a set of examples which show a unique pattern of acceptability for derived nominal complements. The sentences in 3.193 have the corresponding gerundive nominal complements in 3.194, but only 3.193b has an acceptable corresponding derived nominal complement in 3.195b, with the form in 3.195a being unacceptable.

<pre>
3.193a) John amused the children with his stories.
     b) John was amused at the children's antics.

3.194a) John's amusing the children with his stories
     b) John's being amused at the children's antics

3.195a) *John's amuement of the children with his
             stories
     b) John's amusement at the children's antics
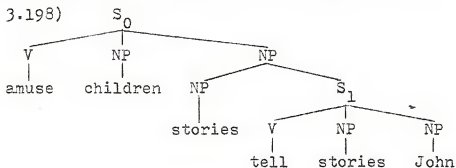</pre>

The unacceptability of 3.195a raises a couple of problems. The first problem is that of instrumental phrases such as <u>with his stories</u>. The examples from Chomsky which I have just repeated above involve sentences with the verb <u>amuse</u>, which belongs to the set of psychological predicates. The sentence in 3.193a has at least two semantic readings. One reading involves the presupposition that John intended to amuse the children, while the other reading does not include that presupposition. The two readings may be illustrated by the use of the adverbs <u>cleverly</u> and <u>inadvertently</u>, as in the sentences in 3.187.

<pre>
3.187a) John cleverly amused the children with his
             stories.
     b) John inadvertently amused the children with
             his stories.
</pre>

The first reading results from the derivation of 3.193a from the underlying structure illustrated in 3.197.

3.197)

```
                    S_0
         ┌───────────┼───────────┐
         V          NP          NP
         │           │           │
       CAUSE        S_1         John
              ┌──────┼──────┐
              V     NP      NP
              │      │       │
            amuse children  NP
                        ┌────┴────┐
                       NP        S_3
                        │    ┌────┼────┐
                     stories V   NP   NP
                             │    │    │
                           tell stories John
```

The other reading results from the derivation of 3.193a from the underlying structure illustrated in 3.198.[20]

3.198)

```
              S_0
      ┌────────┼────────┐
      V       NP        NP
      │        │         │
    amuse  children     NP
                   ┌─────┴─────┐
                  NP          S_1
                   │      ┌────┼────┐
                stories   V   NP   NP
                          │    │    │
                        tell stories John
```

The second semantic reading is also associated with the sentence in 3.199.

3.199) John's stories amused the children.

The structure of S_0 in 3.198 is the same as that of S_1 in 3.197. This means that the structure underlying the second semantic reading of 3.193a is embedded in the structure underlying the first semantic reading of that sentence. The derivation of the sentence in 3.193a from the underlying structure in 3.197 involves the reduction of [$_{NP}$<u>stories</u> [$_S$<u>John told stories</u>]$_S$]$_{NP}$ to <u>John's stories</u>, the pronominal-

ization of the second occurrence of <u>John</u>, and something like
CAUSATIVE FORMATION or PREDICATE RAISING to incorporate
<u>CAUSE</u> into <u>amuse</u>.[21]

The derivation of either the sentence in 3.193a or the
one in 3.190 from the structure in 3.198 can be explained by
allowing <u>John</u> to be optionally moved out of the embedded sen-
tence to subject position of the next higher sentence in the
case of 3.193a, with the alternative being to move the
reduced form of the NP dominating S_1, <u>John's stories</u>, into
subject position.

The sentence in 3.199 is repeated in the set of sen-
tences in 3.200, which have the corresponding passive sen-
tences in 3.201. The sentences in 3.202, which resemble the
passive sentences in 3.201, but have some preposition other
than <u>by</u> preceding the Agent phrase, are found only with verbs
belonging to the set of psychological predicates.

3.200a) John's stories amused the children.
   b) The children's antics amused John.
   c) The storm frightened Mary.
   d) The ceremony pleased Bob.

3.201a) The children were amused by John's stories.
   b) John was amused by the children's antics.
   c) Mary was frightened by the storm.
   d) Bob was pleased by the ceremony.

3.202a) The children were amused at John's stories.
   b) John was amused at the children's antics.
   c) Mary was frightened of the storm.
   d) Bob was pleased with the ceremony.

The sentences in 3.200, 3.201 and 3.202 have the respec-
tive corresponding gerundive nominal complements in 3.203,
3.204 and 3.205.

3.203a) John's stories' amusing the children
b) the children's antics' amusing John
c) the storm's frightening Mary
d) the ceremony's pleasing Bob

3.204a) the children's being amused by John's stories
b) John's being amused by the children's antics
c) Mary's being frightened by the storm
d) Bob's being pleased by the ceremony

3.205a) the children's being amused at John's stories
b) John's being amused at the children's antics
c) Mary's being frightened of the storm
d) Bob's being pleased with the ceremony

While there are the derived nominal complements in 3.208 corresponding to the sentences in 3.202 which are acceptable, the forms in 3.206 and 3.207, which would appear to be the expected derived nominal complements corresponding to the sentences in 3.200 and 3.201 respectively, are not acceptable.

3.206a) *John's stories' amusement of the children
b) *the children's antics' amusement of John
c) *the storm's fright of Mary
d) *the ceremony's pleasure of Bob

3.207a) *the children's amusement by John's stories
b) *John's amusement by the children's antics
c) *Mary's fright by the storm
d) *Bob's pleasure by the storm

3.208a) the children's amusement at John's stories
b) John's amusement at the children's antics
c) Mary's fright of the storm
d) Bob's pleasure with the ceremony

Only the pseudopassive sentences in 3.202 have acceptable corresponding derived nominal complements. There are no derived nominal complements based on psychological predicates which show nominal-initial order such as we have found associated with other types of predicates. The forms in 3.209 are not acceptable.

3.209a) *the amusement of the children at John's stories
   b) *the amusement of John at the children's antics
   c) *the fright of Mary of the storm
   d) *the pleasure of Bob with the ceremony

In Chapter Two I noted that <u>eagerness</u> does not occur in derived nominal complements with nominal-initial order, so that *<u>the eagerness of John to please</u> is unacceptable. The adjective <u>eager</u> describes a mental state, and belongs to the class of emotive predicates, of which psychological predicates are a part. The lack of nominal-initial derived nominal complements seems to be characteristic of emotive predicates.

Following Chomsky's claim that derived nominal complements correspond to base phrase markers, the sentences in 3.193a, 3.200 and 3.201 do not have acceptable corresponding derived nominal complements because certain rules have applied in their derivations which are not allowed to apply in the derivation of derived nominal complements. I have indicated that one rule has applied in the derivation of 3.193a which has not applied in the derivations of 3.202, and which appears to be related to the RAISING rules.

It is not clear what rules have applied in the derivations of the sentences in 3.200 and 3.201 which have not applied in the derivations of the sentences in 3.202. I will assume an ad hoc rule of PSYCH-CHANGE as a way of referring in the next chapter to the pattern of acceptability of derived nominal complements associated with psychological predicates.

Conclusion

In this chapter I first argued that sentences which have undergone any of the RAISING rules do not have corresponding derived nominal complements. I then showed that sentences which have undergone IT-EXTRAPOSITION in their derivations have corresponding derived nominal complements, while sentences which met the structural description of IT-EXTRAPOSITION, but to which the rule did not apply in their derivation, do not have corresponding derived nominal complements. I then showed that while all simple active sentences have corresponding derived nominal complements, only some passive sentences have corresponding derived nominal complements, and that for every pair of active and passive sentences there is a derived nominal complement to which only the AGENT-POSTPOSING part of Passivization has applied. I then argued that with a predicate-initial analysis both extraposed and nonextraposed and active and passive sentences can be related, at least in part, by the same rule, NP-PREPOSING. I have also discussed certain interesting aspects of NP-PREPOSING, and concluded that the application of the rule in the derivation of derived nominal complements is governed by a set of conditions dependent on different aspects of the environment. Finally, I have argued that IT-INSERTION, THERE-INSERTION and PSYCH-CHANGE do not apply in the derivation of derived nominal complements, and that the application of EQUI-NP-DELETION is blocked in derived nominal complements for certain underlying verbs.

In this chapter I have shown that the adoption of a predicate-initial analysis of underlying structure allows the statement of restrictions on the occurrence of derived nominal complements in terms of the application of certain rules being blocked in the derivation of derived nominal complements from underlying embedded sentences. I will discuss how such rules are blocked in Chapter Four.

The analysis in this chapter shows that, contrary to Chomsky's claim, the restrictions on the productivity of derived nominal complements can be easily stated within a transformational framework. In Chapter Four I will discuss how the noun phrase-like internal structure of derived nominal complements can also be accounted for in a transformational framework, based on the analysis given in this chapter.

NOTES

[1] One exception to this claim is that verbs like _be_ and _have_ do not function as main verbs in sentences with corresponding derived nominal complements, as was discussed in Chapter Two.

[2] TOUGH-MOVEMENT is a RAISING rule. It raises the object of an embedded sentence to subject of the next higher sentence. The other RAISING rules are RAISING-TO-OBJECT, which raises the subject of an embedded sentence to object of the next higher sentence, and RAISING-TO-SUBJECT, which raises the subject of an embedded sentence to subject of the next higher sentence. These three RAISING rules are discussed in detail in Stockwell et al. (1973). TOUGH-MOVEMENT is also discussed in Postal (1971). The relation of IT-EXTRAPOSITION and the RAISING rules to derived nominal complements is discussed in the next two sections.

[3] An indefinite object of _please_ has been deleted.

[4] _John_ as the subject of _please_ has been deleted by EQUI-NP-DELETION (discussed in the section under that name below). The unspecified object of _please_ has also been deleted.

[5] This derivation is questionable. See the section on IT-EXTRAPOSITION below.

[6] Removal of the subject of a _that_-complement (here, by RAISING-TO-SUBJECT) results in the formation of an infinitival complement, as in 3.25. This will be discussed in more detail in Chapter Four.

[7] This is unacceptable on the reading of *_Jerry's appearance of opening the door_. A reading based on something like _Jerry appeared in order to open the door_ is not intended.

[8] The possessive suffix does not seem to be necessary with _it_ in gerundive nominal complements, and its absence may improve such complements for some speakers. Some speakers also apparently accept nouns without the possessive suffix in gerundive nominal complements. Ross (1972b) calls such forms _accusative-ing complements_. Fraser (1970) discusses apparent accusative-_ing_ complements, and analyzes them as Object+Complement constructions. The forms in 3.35 seem to be gerundive nominal complements, rather than some such construction.

[9] _Easy_, and several other adjectives and predicate nouns which govern _TOUGH_-MOVEMENT, present a special problem. The only satisfying use of a derived nominal corresponding to _easy_ seems to be in a construction like _the ease with which John is pleased_, which corresponds to something like _John is pleased with ease/easily_. I have no explanation for this exception to DERIVED NOMINALIZATION.

[10] In a grammar which includes the rules of PASSIVIZATION and _IT_-EXTRAPOSITION, those two rules must be ordered

after RAISING-TO-OBJECT but before TOUGH-MOVEMENT and RAIS-
ING-TO-SUBJECT. A sentence like John was believed by Mary
to be a fool is derived by PASSIVIZATION from the structure
underlying Mary believes John to be a fool, which is derived
in turn by RAISING-TO-OBJECT from the structure underlying
Mary believes that John is a fool. This indicates that RAIS-
ING-TO-OBJECT must precede PASSIVIZATION. The sentence it
is believed by Mary that John is a fool is derived by IT-EX-
TRAPOSITION from the structure underlying that John is a
fool is believed by Mary, which is derived in turn by PASSI-
VIZATION from the structure underlying Mary believes that
John is a fool. This indicates that PASSIVIZATION must pre-
cede IT-EXTRAPOSITION. On the other hand, the sentence John
is easy to please is derived by TOUGH-MOVEMENT from the
structure underlying it is easy to please John, which is in
turn derived by IT-EXTRAPOSITION from the structure underly-
ing to please John is easy. Similarly, the sentence John is
likely to win the prize is derived by RAISING-TO-SUBJECT
from the structure underlying it is likely that John will
win the prize, which is in turn derived by IT-EXTRAPOSITION
from the structure underlying that John will win the prize
is likely. This indicates that IT-EXTRAPOSITION must pre-
cede TOUGH-MOVEMENT and RAISING-TO-SUBJECT. Assuming trans-
itivity for the ordering relationships exemplified above,
the order of the five rules within a single cycle must be;
RAISING-TO-OBJECT, PASSIVIZATION, IT-EXTRAPOSITION and
TOUGH-MOVEMENT and RAISING-TO-SUBJECT. However, I will

argue below (cf. IT-EXTRAPOSITION and NP-PREPOSING) that PASSIVIZATION and IT-EXTRAPOSITION are not rules of English, and that the relationships to be accounted for by those rules are accounted for by the rule of NP-PREPOSING. Under this analysis, RAISING-TO-OBJECT precedes NP-PREPOSING, and TOUGH-MOVEMENT and RAISING-TO-SUBJECT are not ordered with respect to NP-PREPOSING.

[11] The rule is called EXTRAPOSITION in Rosenbaum (1967). The name IT-EXTRAPOSITION has come into use to distinguish it from other rules of EXTRAPOSITION.

[12] The unacceptability of the forms in 3.53 and 3.54 can be "explained" by the statement that sentential complements are not allowed to form possessives in English. This is an observation, however, not an explanation. Indeed, this restriction also applies to derived nominal complements, as in *Danny's departure's imminence, while ordinary noun phrases of greater length freely form possessives, as in the King of England's crown and the man next door's son-in-law. In this case, derived nominal complements behave like embedded sentences, not like noun phrases.

[13] It would appear that sentences like those in i are counter-evidence to this statement.

 ia) That John is late seems likely.
  b) That Mildred has fallen down appears certain.
  c) That Mike is a brilliant student happens to be true.

However, such sentences are derived by RAISING-TO-SUBJECT from the structures underlying the sentences in ii.

iia) It seems that it is likely that John is late.
 b) It appears that it is certain that Mildred has
     fallen down.
 c) It happens that it is true that Mike is a
     brilliant student.

[14] Ross' example (1.10).

[15] Ross' example (4.180).

[16] <u>There</u> does not allow the possessive suffix at all in
gerundive nominal complements (cf. Note 8 above).

[17] I have indicated the alternate forms in 3.162 since
Newmeyer paired 3.162aii with 3.160a in his discussion of
this point.

[18] The form in 3.165b seems pretty bad to me. The
choice of <u>happenstance</u> as the derived nominal corresponding
to <u>happen</u> seems more appropriate here than the other possi-
bility, <u>happening</u>.

[19] EQUI-NP-DELETION applies to the end-cyclic subject
of an embedded sentence, as shown by its application to the
derived subjects of embedded passive sentences. Both <u>i</u> and
<u>ii</u> are possible results of applying the rule.

 <u>i</u>) Someone intended to leave Mary behind.

 <u>ii</u>) Mary did not intend to be left behind by anyone.

[20] Lee (1970:70ff.) suggests that the surface subjects
of sentences like <u>John amused the children by telling</u>
<u>stories</u> (non-intentional reading) are derived by a RAISING
rule from the embedded sentence <u>John told stories</u>. The para-
phrase <u>John's telling stories amused the children</u> would be
derived by moving the whole embedded sentence into subject
position. In the sentence <u>John amused the children with his</u>

stories, his stories (=John's stories) is a reduced form of
stories which John told. Hence, it would appear that a RAIS-
ING rule could move John out of with John's stories (or,
rather, copy it out, leaving the pronoun) and into subject
position. Lee's suggestion would involve extending the list
of predicates governing RAISING rules to psychological predi-
cates. My suggestion would involve postulating a new RAIS-
ING rule which leaves a pronoun behind, and would require
independent motivation for the substitution of with for the
predicate to derive phrases like with his stories.

CHAPTER FOUR
RULE-ORDERING AND DERIVED NOMINAL COMPLEMENTS

Introduction

In Chapter Three I showed for a number of examples that
whether or not a particular sentence has a corresponding
derived nominal complement depends on whether or not that
sentence has undergone one or more of a certain set of trans-
formations in its derivation. Those sentences which have
undergone one of the rules in question do not have corres-
ponding derived nominal complements. In this chapter I will
offer an explanation for the above fact.

In Chapter One I stated my assumption that derived nomi-
nal complements are derived transformationally-from underly-
ing embedded sentences. In Chapter Two I showed that, with
the exception of the Germanic member of Germanic-Latinate
synonym pairs, all predicates have corresponding derived
nominals. Finally, in Chapter Three I showed that the only
other restrictions on the productivity of derived nominal
complements are due to the failure of certain transforma-
tional rules to apply in the derivation of derived nominal
complements. In this chapter I will argue that certain
rules are blocked from applying in derived nominal comple-
ments because DERIVED NOMINALIZATION precedes those rules,
and the rules cannot apply to nominalized structures. I

will also argue that the rule known as COMPLEMENTIZER PLACE-
MENT is not compatible with the theory of the cycle, and
that no such rule is necessary in any case for any comple-
ments other than nominal complements. Although it will
appear that COMPLEMENTIZER PLACEMENT will still be needed to
properly account for nominal complements, I will argue that
it is better to have the rules of DERIVED NOMINALIZATION and
GERUNDIVE NOMINALIZATION apply on the cycle of the comple-
ment, and to allow these rules to 'look up' into the next
higher sentence and include the predicate of the next higher
sentence in their environments than it is to retain COMPLE-
MENTIZER PLACEMENT. Finally, I will argue that the specific
characteristics of derived nominal complements are not the
direct result of the application of DERIVED NOMINALIZATION,
but rather the result of a process that begins with the
application of DERIVED NOMINALIZATION.

Newmeyer's Proposal

The argument that appropriate ordering of the rules
will account for the facts of productivity was presented
independently in Albury (1971) and Newmeyer (1971).
Newmeyer argues that DERIVED NOMINALIZATION precedes all the
cyclic rules, and by changing the predicate of the embedded
sentence to a nominal, prevents the application of any
later rule which mentions the predicate in its structural
description.

Newmeyer's claim that DERIVED NOMINALIZATION precedes
all cyclic rules seems to imply that the rule is precyclic.

I will not accept Newmeyer's claim as it stands, but will present arguments below that DERIVED NOMINALIZATION is cyclic, and ordered very early in the cycle, although not necessarily first in the cycle.

Newmeyer's proposal that the nominalization of the underlying predicate blocks the later application of rules mentioning predicate in their structural descriptions appears to be well motivated. In Chapter Three I showed that there are no acceptable derived nominal complements corresponding to sentences which have undergone one of the RAISING rules, IT-INSERTION, THERE-INSERTION, DATIVE-MOVE-MENT, and/or PSYCH-CHANGE in their derivations.

Each of the RAISING rules raises a noun phrase into a position defined by its relationship to the predicate of the higher sentence. In RAISING-TO-OBJECT, the noun phrase is raised into a position immediately to the right of the predicate of the higher sentence. In RAISING-TO-SUBJECT (and the similar rules governed by psychological predicates) and TOUGH-MOVEMENT, the noun phrase is raised into a position immediately to the left of the predicate of the higher sentence.

IT-INSERTION and THERE-INSERTION introduce, in appropriate circumstances, a semantically empty word as the subject of the predicate. That is, these rules insert it or there immediately to the left of the predicate.

DATIVE-MOVEMENT involves a switch in position between direct and indirect objects, and thus has the effect of

moving an indirect object to a position immediately to the right of the predicate.

Although I have not said anything about the form of PSYCH-CHANGE, this rule (or set of rules) involves the choice of the noun phrase to be subject of the sentence in surface structure, as well as differences in the surface form of the predicate.

Each of these rules must refer explicitly to the structural relationships between a noun phrase and a predicate.[1] The structural description of each rule must include the mention of _predicate_ within the sentence to which the rule is directly applying.

The rule of NP-PREPOSING presents some difficulty at this point. This rule also moves a noun phrase to a position immediately to the left of a predicate, thus making it the subject of the predicate in surface structure. By Newmeyer's proposal, this rule should not apply in the derivation of derived nominal complements. In fact, it does so apply, although its application is very limited. The application of NP-PREPOSING in the derivation of derived nominal complements is limited to simple noun phrases and to a subset of predicates, and moreover, is optional even when it does apply, while the application of NP-PREPOSING to head nouns is always obligatory in the derivation of sentences, if the structural description of the rule is met. There would be no conflict with Newmeyer's proposal if it were assumed that a different rule applied in the derivation of

derived nominal complements than did in the derivation of
sentences, but as I showed in Chapter Three, there is no
other reason to postulate two rules of NP-PREPOSING. I see
no non-ad hoc way around this problem. Either NP-PREPOSING
violates Newmeyer's proposed constraint, or two rules of
NP-PREPOSING are admitted on the sole basis of different
conditions on application in the derivation of sentences
and of derived nominal complements.

Newmeyer bolsters the argument for his proposal by
pointing to the rules of EQUI-NP-DELETION and REFLEXIVE.
EQUI-NP-DELETION applies to many, but not all, derived nom-
inal complements which meet the structural description of the
rule. Applicability seems to be governed by many interact-
ing factors, two of which are the previous application of
DERIVED NOMINALIZATION and the predicate nominalized, as
mentioned in the section on that rule in Chapter Three.
There appears to be no restriction on the application of
REFLEXIVE to derived nominal complements, as indicated by
the sentences in 4.1, with their corresponding gerundive
nominal complements in 4.2 and derived nominal complements
in 4.3.

4.1a) Bill hates himself.
   b) The president promoted himself to generalisimo.
   c) John described himself as intelligent.

4.2a) Bill's hating himself.
   b) the president's promoting himself to generalisimo
   c) John's describing himself as intelligent

4.3a) Bill's hatred of himself
   b) the president's promotion of himself to
        generalisimo
   c) John's description of himself as intelligent

REFLEXIVE applies between two identical noun phrases dominated by a single S node with no intervening S node (clause mates). There is no need to mention _predicate_ in the structural description of the rule. EQUI-NP-DELETION applies between two identical noun phrases also, but the noun phrases require careful definition. One noun phrase (the one deleted) is the subject of an embedded sentence (or complement). While _subject_ is defined in terms of the relation of a noun phrase to a predicate, this particular occurrence of _subject_ is embedded within the sentence the rule is applying to, and does not bear on Newmeyer's claim, which refers to the higher sentence which is being nominalized. In the analysis of this rule presented in Stockwell et al. (1973), the appropriate noun of the higher sentence is defined by case role, which is independent of any mention of _predicate_. As long as EQUI-NP-DELETION can be stated without mention of the predicate of the higher sentence, there is no contradiction of Newmeyer's proposal.

The Order of the Rules

The Cyclic Nature of AGENT-PREPOSING

Newmeyer states that DERIVED NOMINALIZATION precedes all the cyclic rules. As was mentioned in Chapter Three, the first rule in Chomsky's (1970) analysis of passivization is AGENT-POSTPOSING (equivalent to the nonapplication of AGENT-PREPOSING in a predicate-initial analysis). AGENT-POSTPOSING (or AGENT-PREPOSING) applies freely in derived nominal complements, even though _predicate_ is

included in its structural description.[2] If Newmeyer's pro-
posal is to stand, then AGENT-POSTPOSING (or AGENT-PREPOSING)
must precede DERIVED NOMINALIZATION. Newmeyer states that
there is no evidence that AGENT-POSTPOSING is cyclic, so
that it may be assumed to precede DERIVED NOMINALIZATION.

The question of whether or not AGENT-PREPOSING is cyc-
lic is worth considering in detail, as it bears on the ques-
tion of whether or not DERIVED NOMINALIZATION is cyclic.
The best evidence for the cyclic nature of a rule is the
existence of some RULE X which would apply after AGENT-PRE-
POSING at some point in a derivation and before AGENT-PREPOS-
ING somewhere else. In fact, there is no such rule known in
the grammar of English, leading to Newmeyer's claim that
there is no evidence for the cyclic nature of AGENT-POSTPOS-
ING (or, here, AGENT-PREPOSING). However, there is reason
to believe that there could be no such evidence, even though
AGENT-PREPOSING were a cyclic rule. If AGENT-PREPOSING were
the first rule of the cyclce, or if it were preceded in the
cycle only by rules with which it could never interact, then
it would be impossible to find evidence of the type discussed
above for the cyclic nature of AGENT-PREPOSING.

AGENT-PREPOSING makes an Agent noun phrase into the
subject of a sentence. No matter how the rule is formulated
(even if it is formulated as AGENT-POSTPOSING), the Agent
noun phrase is dominated by the same S, with no intervening
S, both before and after the application of the rule. No
RULE X can be shown to apply before AGENT-PREPOSING, since

any previous application of RULE X would be to an S lower than the S of the Agent noun phrase in question, and would thus have no effect on the higher S. Given the nature of AGENT-PREPOSING and the assumption that it is one of the earliest rules in the cycle, it is impossible to show that it follows any other cyclic rule.

Since it would appear that it is impossible to discover direct evidence of the cyclic nature of AGENT-PREPOSING, I would like to consider some indirect evidence. AGENT-PRE-POSING can apply in more than one S in a single derivation, as can be seen in the sentences in 4.4.

4.4a) John discovered that Mary hated him.
   b) Jerry hoped that Mary would find out that Mack really loved Suzie.

This in itself does not show that AGENT-PREPOSING is cyclic, since a precyclic rule could conceivably prepose all Agents within their respective sentences at one time. How-ever, AGENT-PREPOSING does not necessarily apply to all Agents in a single derivation, so that passive sentences may be embedded in active sentences and vice versa, as in 4.5.

4.5a) John hoped that the package would be handled carefully by the Post Office.
   b) Mary claimed that she was being followed by a strange man.
   c) That Bob had betrayed Tom was not known to the other members of the cell.
   d) That the Earth is not a perfect sphere was demon-strated by the first artificial satellite.

For a precyclic rule to produce such structures, it would need to not only recognize Agents within individual embedded sentences, but it would also have to recognize the

appropriate contextual information governing the application
of the rule within each embedded sentence. The rule would
also have to be constrained to prevent it from moving an
Agent out of its own sentence. All of this means that if
AGENT-PREPOSING were precyclic, it would have to be formu-
lated to apply to possibly many different sentences within
a single tree, but at the same time confine each application
to a single sentence, and also be governed as to whether or
not to apply in any given sentence by contextual information
specific to that sentence. All-in-all, this does not seem
to be a very desirable type of rule. All of the above com-
plications may be avoided by assuming that AGENT-PREPOSING
is a cyclic rule.

The Place of Rules of Nominalization in the Cycle

Since, as was mentioned before, AGENT-PREPOSING
involves the mention of _predicate_ in its structural descrip-
tion, and can apply freely in the derivations of derived
nominal complements, it must precede DERIVED NOMINALIZATION.
This means that DERIVED NOMINALIZATION is also cyclic. That
this is so is also shown indirectly by the existence of the
derived nominal complements in 4.6, which in turn have embed-
ded derived nominal complements.

4.6a) Harvey's discovery of Mary's disappearance
   b) Bill's search for evidence of John's betrayal
          of Alice
   c) Jane's reluctance to admit her hatred of Jerry

The same arguments given above to show the undesirabi-
lity of making AGENT-PREPOSING a precyclic rule also apply
to DERIVED NOMINALIZATION.

It can be shown that all of the other rules discussed above may be ordered after DERIVED NOMINALIZATION. The rules which mention _predicate_ in their structural descriptions are blocked if the predicate has been nominalized; hence, any rule of this sort which does not apply to any derived nominal complement may be presumed to follow DERIVED NOMINALIZATION. EQUI-NP-DELETION is blocked for some derived nominals, but not for their corresponding predicates. As was mentioned in Chapter Three, there seem to be several factors at work blocking EQUI-NP-DELETION in the derivations of derived nominal complements, but whatever they are, the simplest explanation for the fact that it is blocked in some derived nominal complements is that the rule follows DERIVED NOMINALIZATION.

REFLEXIVE, which does not interact with DERIVED NOMINAL-IZATION, can nevertheless be shown to follow at least one rule which follows DERIVED NOMINALIZATION. The sentences in 4.7 have reflexive nouns as objects. The reflexive nouns have been raised to object position from the embedded sentences (in 4.8) underlying the infinitive and gerundive nominal complements by RAISING-TO-OBJECT.[3]

4.7a) John believes himself to be handsome.
b) Mary considers herself to be intelligent.
c) Bill likes to watch himself acting in the movies.

4.8a) John believes $[_S$John is handsome$]_S$

b) Mary considers $[_S$Mary is intelligent$]_S$

c) Bill likes $[_{S_1}$ Bill watch $[_{S_2}$ Bill act in the movies$]_{S_2}]_{S_1}$

Since REFLEXIVE cannot cross sentence boundaries in its
application, the subjects of the embedded sentences cannot
become reflexive until they have been raised to object of
the predicate in the higher sentence. Hence, REFLEXIVE must
follow RAISING, which follows DERIVED NOMINALIZATION. The
fact that REFLEXIVE is not blocked by DERIVED NOMINALIZATION
supports Newmeyer's claim that only rules that mention predi-
cate are regularly blocked by DERIVED NOMINALIZATION.

All of the rules discussed above which are blocked by
DERIVED NOMINALIZATION apply freely in gerundive nominal com-
plements. GERUNDIVE NOMINALIZATION also changes the predi-
cate so that it no longer functions as such. No modals are
present in gerundive nominal complements, and -_ing_ replaces
the tense marker. I see no reason why this cannot be called
nominalization of the predicate. The presence of _be_ and
have as auxiliaries and the absence of the preposition _of_
following gerundive nominals can be explained by ordering
the rules responsible after DERIVED NOMINALIZATION and
before GERUNDIVE NOMINALIZATION. If _be_ and _have_ are
inserted, nominalization blocks the rule. If they are pre-
sent in deeply underlying structures, they are deleted by a
rule that applies to noun phrases, not to sentences. If _of_
is inserted, the rule applies to noun phrases, not to sen-
tences. If _of_ is present in deeply underlying structures,
it is deleted by a rule that is blocked by nominalization.

I have just argued, in effect, that most cyclic rules
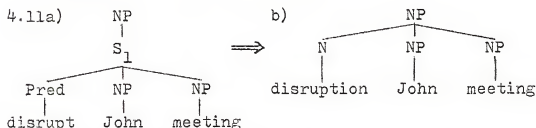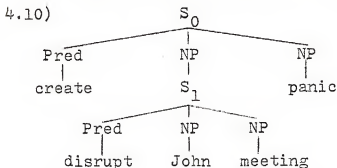are ordered between DERIVED NOMINALIZATION and GERUNDIVE

NOMINALIZATION. This would mean that derived nominal comple-
ments would function as noun phrases for most of the cycle,
while gerundive nominal complements would function as sen-
tences for most of the cycle. One of Chomsky's (1970) argu-
ments for denying an origin as underlying embedded sentences
to derived nominal complements is that they have a noun
phrase-like internal structure, while gerundive nominal com-
plements have a sentence-like internal structure. Having
derived nominal complements function as noun phrases through
most of the cycle while gerundive nominal complements do not
would account for the observed differences. Before pursuing
this proposal further, I must turn to a discussion of the
nature of the cycle.

<div align="center">The Cycle and Complementation</div>

COMPLEMENTIZER PLACEMENT

An unstated assumption underlying the discussion in the
previous section is that DERIVED NOMINALIZATION (and GERUND-
IVE NOMINALIZATION) apply in the same cycle as the other
rules discussed in connection with the examples presented in
Chapter Three. This means that in the derivation of the sen-
tences in 4.9 from the underlying structure in 4.10, DERIVED
NOMINALIZATION (in the case of 4.9a) and GERUNDIVE NOMINALI-
ZATION (in the case of 4.9b) apply to the sentence dominated
by the node S_1. Rules which refer to <u>predicate</u> in their
structural description are blocked if the nominalization
operation in 4.11 has been performed preceding the rule
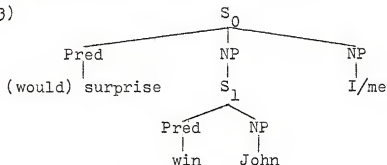within the same cycle.

4.9a) John's disruption of the meeting created panic.
 b) John's disrupting the meeting created panic.

4.10)
```
                    S₀
          ┌─────────┼─────────┐
        Pred       NP         NP
         │          │          │
       create      S₁        panic
              ┌─────┼─────┐
            Pred    NP    NP
             │       │     │
          disrupt  John  meeting
```

4.11a)
```
        NP                              NP
         │                     ┌────────┼────────┐
        S₁              ⟹      N       NP       NP
    ┌────┼────┐                │        │        │
  Pred  NP   NP          disruption   John    meeting
   │     │    │
disrupt John meeting
```

The description of the operation of nominalization given in the above paragraph is not in accord with the usual concept of the nature of rules of complementation found in the literature. Rosenbaum (1967) presents a rule he calls COMPLEMENTIZER PLACEMENT which is intended to account for the placement of <u>that</u> in <u>that</u>-complements, <u>for</u> and <u>to</u> in infinitival complements, and the -'<u>s</u> and -<u>ing</u> suffixes in gerundive nominal complements. With <u>that</u>-complements, COMPLEMENTIZER PLACEMENT simply adjoins <u>that</u> to an embedded sentence. With infinitival or gerundive nominal complements, COMPLEMENTIZER PLACEMENT inserts <u>for</u> and <u>to</u> or -'<u>s</u> and -<u>ing</u> into the embedded sentence. The type of complement formed is governed by the predicate in the higher sentence. In the derivation of the sentences in 4.12 from the underlying structure in 4.13, COMPLEMENTIZER PLACEMENT would apply on the cycle of S₀ in each case.

4.12a) That John won surprises me.
   b) For John to win would surprise me.
   c) John's winning surprises me.

4.13)

There is good reason for having COMPLEMENTIZER PLACE-
MENT apply on the cycle of S_0 in 4.13. This allows COMPLE-
MENTIZER PLACEMENT to apply to the higher sentence which
includes the predicate which governs the type of complement
the embedded sentence may become, and it prevents COMPLE-
MENTIZER PLACEMENT from applying to underlying sentences
which are not embedded.

Bresnan (1970:299-300) argues that this formulation of
COMPLEMENTIZER PLACEMENT is peculiar in that "it violates
an otherwise well-motivated universal stated by Chomsky
(1965:146), namely, that while transformations may remove
material from embedded sentences, no transformation can
insert morphological material into 'lower' sentences." I
will now examine this peculiarity of COMPLEMENTIZER PLACE-
MENT in more detail.

To facilitate this discussion I would like to introduce
the terms proper constituent and embedded constituent. I
will define a proper constituent of a sentence S_n as a con-
stituent dominated by S_n, but not dominated by an S_m which

is also dominated by S_n. In other words, a proper consti-
tuent is any constituent of a sentence which is not also a
constituent of a sentence embedded in the first sentence.
An embedded constituent of a sentence S_n is a constituent
which is dominated by a sentence S_m which is dominated by
the sentence S_n. In other words, an embedded constituent of
a sentence is a proper constituent of a sentence embedded in
the first sentence.

The transformations discussed here may be divided into
three classes on the basis of their effect on the proper and
embedded constituents of the sentences they apply to. Some
rules affect only proper constituents. These rules may move
proper constituents, as with AGENT-PREPOSING, NP-PREPOSING
and DATIVE-MOVEMENT, create proper constituents, as with
IT-INSERTION and THERE-INSERTION, or delete proper consti-
tuents, as with the rule or rules which delete indeterminate
subjects or objects to derived sentences like those in 4.14
from the underlying structures in 4.15.

4.14a)   It is easy to please John.
    b)   John is eager to please.

4.15a)   easy $[_{NP}[_S$ someone please John$]_S]_{NP}$

    b)   John eager $[_{NP}[_S$ John please someone$]_S]_{NP}$

Some rules affect both proper constituents and embedded
constituents of the sentences they apply to. The RAISING
rules convert embedded constituents into proper constituents.

Finally, some rules affect only embedded constituents.
There are three subdivisions of this group. There are rules

which move constituents down into embedded sentences. These
rules move constituents of abstract higher sentences down
into the surface structure sentence, such as NEGATIVE-MOVE-
MENT (cf. R. Lakoff, 1968). Such rules appear to violate
Chomsky's (1965) universal, but are outside the scope of
this discussion.

Another subdivision includes rules which delete embed-
ded constituents, such as EQUI-NP-DELETION, which deletes an
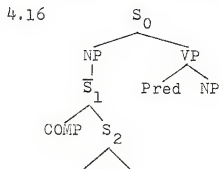embedded constituent when it is identical to a specified
proper constituent.

The last subdivision consists of COMPLEMENTIZER PLACE-
MENT. This rule inserts complementizers into embedded sen-
tences, but has no effect on any proper constituent. Its
only connection with any proper constituent is that the
predicate of the higher sentence governs the type of comple-
ment formed.[4]

The RAISING rules, EQUI-NP-DELETION and COMPLEMENTIZER
PLACEMENT are all governed by the predicate of the higher
sentence. RAISING converts an embedded constituent into a
proper constituent, EQUI-NP-DELETION requires identity
between an embedded constituent and a proper constituent,
but Rosenbaum's (1967) COMPLEMENTIZER PLACEMENT has no con-
nection with the higher sentence that it applies on other
than that it is governed by the higher predicate.

There is only one justification for having a rule like
COMPLEMENTIZER PLACEMENT apply in the cycle of the higher
sentence in which the complement is embedded, and that is to

allow the rule to be governed by the predicate of the higher sentence. This allows the rule to properly account for the restrictions on the type of complement a predicate may take, and for the fact that only embedded underlying sentences become complements in surface structure. The principle of the cycle requires that all cyclic rules apply to an embedded sentence before any cyclic rule applies to the higher sentence in which the first sentence is embedded. COMPLEMENTIZER PLACEMENT reaches down into an embedded sentence to which the cycle has previously applied, and thus stretches the principle of the cycle to the breaking point. Chomsky's (1965:146) claim that no transformation can insert morphological material into an embedded sentence supports the above analysis of COMPLEMENTIZER PLACEMENT as violating the principle of the cycle.

Bresnan (1970) offers, as a solution to the problems with COMPLEMENTIZER PLACEMENT discussed above, the Phrase-structure Hypothesis, which is a proposal that complementizers are specified in deep structure by a phrase-structure rule that rewrites $\bar{S}$ as COMP+S, giving deep structure trees like that in 4.16, and that predicates are subcategorized for the form of the complementizer which is lexically inserted under the node COMP.

4.16

S_0

NP — $\bar{S}_1$

VP — Pred NP

COMP S_2

This Phrase-structure Hypothesis raises its own problems. It requires the ad hoc extension of the principle of subcategorization features to allow such features to apply across sentence boundaries. While it is easy enough to state that a particular predicate takes such-and-such complements in surface structure, the expression of such restrictions in underlying structure is not simple. The Phrase-structure Hypothesis requires that a subcategorization feature on the predicate in S_0 in 4.16 govern the selection of a lexical item (the complementizer) within the embedded sentence $\bar{S}_1$. At the same time, the complementizer under COMP must eventually be inserted into the embedded sentence S_2. Any possible modification of the Phrase-structure Hypothesis would still require either that subcategorization features reach across sentence boundaries, or that complementizers be inserted into lower sentences. Bresnan's Phrase-structure Hypothesis hides the problem of COMPLEMENTIZER PLACEMENT without resolving it.

I will show below that COMPLEMENTIZER PLACEMENT can be eliminated from the grammar without resort to anything like the Phrase-structure Hypothesis. I will first discuss the formation of infinitival complements, and then return to nominal complements. As I have already mentioned, the formation of _that_-complements does not require the insertion of any complementizer into the embedded sentence, and thus will not enter into this discussion.

Infinitival Complementation

In Rosenbaum's analysis, infinitival complements are created by the insertion into the embedded sentence of _for_ preposed to the subject and _to_ preposed to the part of the predicate which would other wise carry the tense marker. A later rule would delete the preposes _for_'s of most infinitival complements. Thus, the underlying structures in 4.17 are transformed into the intermediate structures in 4.18 by COMPLEMENTIZER PLACEMENT, and eventually become the sentences in 4.19.

4.17a) $[_{S_1}$ John want $[_{S_2}$ Bill join John's fraternity$]_{S_2}]_{S_1}$

　b) $[_{S_1}$ Jerry expect $[_{S_2}$ Jerry win the prize$]_{S_2}]_{S_1}$

　c) $[_{S_1}$ Mary be anxious $[_{S_2}$ Mike arrive$]_{S_2}]_{S_1}$

4.18a) $[_{S_1}$ John want $[_{S_2}$ for Bill to join John's fraternity$]_{S_2}]_{S_1}$

　b) $[_{S_1}$ Jerry expect $[_{S_2}$ for Jerry to win the prize$]_{S_2}]_{S_1}$

　c) $[_{S_1}$ Mary be anxious $[_{S_2}$ for Mike to arrive$]_{S_2}]_{S_1}$

4.19a) John wants Bill to join his fraternity.
　b) Jerry expects to win the prize.
　c) Mary is anxious for Mike to arrive.

Kiparsky and Kiparsky (1972) offer an alternative to Rosenbaum's analysis. They propose that infinitival complements result from the failure of the verb to agree with the subject because the subject is no longer present as such. Stockwell et al. (1973:546ff.) list three ways in which the

subject is made no longer available for verb-agreement in embedded sentences: when it takes the preposition _for_ with an emotive predicate in the higher sentence;[5] when EQUI-NP-DELETION has applied; and when RAISING-TO-SUBJECT or RAISING-TO-OBJECT has applied. If the subject is not removed by one of these means, a _that_-complement results. Pizzini (1972) reduces this list by having the _for_ associated with emotive predicates adjoined to the embedded sentence, and the subject of the embedded sentence then raised to become the object of _for_. By this analysis, _for_ remains a proper constituent of the higher sentence.

Starting with the underlying structures in 4.20, under this analysis, the application of RAISING-TO-OBJECT to 4.20a, EQUI-NP-DELETION to 4.20b and the adjunctiontion of _for_ to the embedded sentence in 4.20c, with subsequent raising of the embedded subject to become object of _for_, gives the intermediate structures in 4.21. In each case the embedded sentence has lost its subject, and the predicate cannot agree with a subject it does not have. This causes the formation of an infinitive, and results eventually in the surface sentences in 4.19.

4.20a) $[_{S_1}$ want John $[_{S_2}$ join Bill John's fraternity$]_{S_2}]_{S_1}$
   b) $[_{S_1}$ expect Jerry $[_{S_2}$ win Jerry the prize$]_{S_2}]_{S_1}$
   c) $[_{S_1}$ anxious for Mary $[_{S_2}$ arrive Mike$]_{S_2}]_{S_1}$

4.21a) $[_{S_1}$ John want Bill $[_{S_2}$ join John's fraternity$]_{S_2}]_{S_1}$
   b) $[_{S_1}$ Jerry expect $[_{S_2}$ win the prize$]_{S_2}]_{S_1}$
   c) $[_{S_1}$ Mary be anxious for Mike $[_{S_2}$ arrive$]_{S_2}]_{S_1}$

It would appear at this point that _to_ is inserted into the embedded sentence in each case, in violation of Chomsky's claim that such insertion by a transformation is unnatural. This would be so if _TO_-INSERTION were a cyclical rule. Chomsky (1965:146) specifically states "that no morphological material can be introduced into a configuration dominated by S once the cycle of transformational rules has already completed its application to this configuration." I will argue, however, first, that _TO_-INSERTION is a post-cyclic rule, and second, that post-cyclic rules are not necessarily subject to the restriction stated by Chomsky.

_TO_-INSERTION (or INFINITIVE FORMATION) applies if verb-agreement is not possible. The easiest way to handle this fact in the grammar is to order _TO_-INSERTION after the rule (or rules) responsible for verb-agreement, with _TO_-INSERTION blocked by the application of the rule _VERB-AGREEMENT. Ordering _TO_-INSERTION before VERB-AGREEMENT would require that _TO_-INSERTION be sensitive to the same environmental facts as VERB-AGREEMENT. In either case, both rules must be late enough to allow for all possible changes in the subject. VERB-AGREEMENT cannot be cyclical, as there has been no application of VERB-AGREEMENT in an embedded sentence prior to the removal of the subject by EQUI-NP-DELETION or one of the RAISING rules, and we have already seen that these rules apply on the cycle of the next higher sentence, after the cycle is completed on the embedded lower sentence. VERB-AGREEMENT cannot apply in the cycle on the

next higher sentence, for it then could not apply to the highest sentence. The remaining alternative is for VERB-AGREEMENT and TO-INSERTION to be post-cyclic.

Assuming that VERB-AGREEMENT and TO-INSERTION are post-cyclic, I will turn to the question of whether post-cyclic rules are subject to the restriction against downward insertion of morphological material. I have argued above that the principle of the cycle requires that cyclical rules affect proper constituents. Although embedded constituents may also be affected, no cyclical rule may affect only embedded constituents. Post-cyclic rules, however, are not tied to a particular sentence within the overall structure, but apply to the whole structure. In these circumstances, it is logical that post-cyclic rules not distinguish between proper and embedded constituents. TO-INSERTION would therefore be a rule which inserts to before any predicate in a string which has not undergone VERB-AGREEMENT.

In the subsection on the Cycle and Complementation just above I stated that the assumption that nominalization occurs on the cycle of the embedded sentence allows a simple rule-ordering explanation for the restrictions on productivity of derived nominal complements. The analysis of infinitival complements I have given above leads to another indirect argument for that conclusion.

As was mentioned above, an infinitival complement results when the subject of an embedded sentence is removed transformationally. The subject noun phrases of gerundive

nominal complements are sometimes deleted by EQUI-NP-DELE-
TION without creating infinitival complements. Deletion on
Agent-subject identity has occurred in 4.22, and on Dat-
ive-subject identity in 4.23.[6]

4.22a) John anticipated winning the race.
  b) Bill delighted in telling tall stories.
  c) Mary enjoyed reading Russian novels.

4.23a) Mark imitated Jane putting on a girdle.
  b) Alice watched Jerry running the race.
  c) Mike worried about Mary walking through town.

If the gerundive nominal complements are formed before
EQUI-NP-DELETION deletes their subjects, there is no possibi-
lity of the deletion leading to the creation of an infiniti-
val complement. In any case, while infinitival complements
are always the result of such deletions, gerundive nominal
complements are not, as many retain their subjects. If ger-
undive nominal complements are formed by the application of
GERUNDIVE NOMINALIZATION on the cycle of the embedded sen-
tence (the cycle before the application of EQUI-NP-DELETION),
the desired results are obtained.

<u>Nominalization</u>

I have presented arguments that the rule of COMPLEMENT-
IZER PLACEMENT not only violates the principle of the cycle,
but is not necessary to account for <u>that</u>-complements and
infinitival complements. All of the rules needed to derive
<u>that</u>-complements and infinitival complements either apply on
the cycle above the complement, or are post-cyclic rules.

On the other hand, I have argued that the rules of
DERIVED NOMINALIZATION and GERUNDIVE NOMINALIZATION apply on

the cycle of the nominal complement, so that COMPLEMENTIZER PLACEMENT is not needed to account for them either. One major objection possible to this view of rules of nominalization is that the transformational derivation of nominal complements from underlying embedded sentences must account for the restrictions on the types of complements predicates in higher sentences may take. If the rules of nominalization apply on the cycle of the nominal complements, they must look up into the next higher sentence to see if the predicate of that sentence takes nominal complements. This implies a major change in the concept of the cycle. It would seem to me, however, that allowing rules of nominalization to include a higher predicate in their structural descriptions is preferable to the insertion of morphological material into a lower sentence. In addition, having rules of nominalization apply on the cycle of the nominal complement allows a simple explanation of the fact that many rules do not apply in the derivation of derived nominal complements, an explanation not possible with COMPLEMENTIZER PLACEMENT. Even if the Lexical Hypothesis is adopted, however, the above arguments would still apply to gerundive nominal complements.

Complementation as a Process

There are two basically different ways of handling the derivation of complements. One way is to write a single complex rule which accounts for all the details of structure characteristic of a particular type of complement. The rules

in Lees (1963) are excellent examples of this approach. The second way to handle the derivation of complements is to write several fairly simple rules each accounting for only part of the structure characteristic of a particular type of complement. Any independent motivation of the rules helps to strengthen such an analysis. This approach may be used to profit elsewhere, as with Chomsky's (1970) analysis of passivization as the two rules of AGENT-POSTPOSING and NP-PREPOSING.

I have already presented an analysis of the derivation of infinitival complements as being due to the deletion of the subject of an embedded sentence by either a RAISING rule or EQUI-NP-DELETION, followed by the post-cyclic application of TO-INSERTION. Derived nominal complements are formed by the application of DERIVED NOMINALIZATION, followed by the rules accounting for the absence of auxiliaries, presence of a preposition (i.e. of) before direct objects, the prenominal position of adjectives corresponding to adverbs, the formation of a possessive from the subject, or the insertion of another determiner if there is no subject, and the morphological modification of the former predicate. Gerundive nominal complements are formed by the application of GERUNDIVE NOMINALIZATION followed by the last two rules listed above which apply to derived nominal complements. Thus, the rule producing possessive noun phrases applies in the derivation of both derived nominal complements and gerundive nominal complements, while the rule suffixing -ing to a former

predicate applies to some derived nominals and all gerundive nominals.

[1] Chomsky (1965:69) defines 'subject-of' as, "for English...the relation holding between the NP of a sentence of the form NP-Aux-VP and the whole sentence," and 'object-of' as "the relation between the NP of a VP of the form V-NP and the whole VP."

[2] AGENT-PREPOSING moves the Agent into a position immediately to the left of the predicate.

[3] The derivation of 4.6c from 4.7c involves the raising of $Bill$ from subject of S_2 to object of $watch$ in S_1, the pronominalization and reflexivization of $Bill$ object of $watch$ under identity with $Bill$ subject of S_1, and, finally, the deletion of $Bill$ subject of S_1 under identity with $Bill$ Agent of the highest sentence.

[4] Actually, $that$-complementation does not share this characteristic of COMPLEMENTIZER PLACEMENT, since it involves the insertion of $that$ as a proper constituent of the higher sentence adjoined to the embedded sentence.

[5] The subjunctive mood also requires the insertion of for.

[6] Ross (1972c) calls forms like $Jane\ putting\ on\ a$ $girdle$ (in 4.22a) accusative-ing complements. However, Fraser (1970) correctly pointed out that such forms are not complements, but rather a noun phrase ($Jane$) plus a complement ($putting\ on\ a\ girdle$).

CHAPTER FIVE
CONCLUSIONS

In this study I have shown that derived nominal comple-
ments, when properly defined, have a regular, if limited,
productivity. The fact that derived nominal complements
have an internal structure like that of noun phrases while
other types of complements have an internal structure more
like that of sentences is shown to have a simple explanation.
Ordering DERIVED NOMINALIZATION before most cyclical rules
allows a simple explanation of the facts of derived nominal
complements.

However, the simple explanation I have presented here
is not really possible in the framework assumed by Chomsky.
In particular, I have assumed underlying structures more
abstract than those in Chomsky's theory, including the
predicate-initial analysis of underlying structures before
the application of cyclic rules. While, as Chomsky said,
the question of whether or not derived nominal complements
can be described in a transformational framework is an
empirical one, the decision as to how abstract the underly-
ing analysis is to be is not empirical. By choosing a more
abstract analysis, I have been able to handle derived nomi-
nal complements in a transformational framework.

The various assumptions I have made about the nature of underlying structures also leads to other interesting results. I have shown that an abstract, predicate-initial analysis of the underlying structure of English eliminates the need for any rule of extraposition, without adding any rule to the grammar. Contrary to Chomsky's claim that a transformational analysis of derived nominal complements would involve the complication of the transformational component, my analysis results in a simplification of that component. My analysis also does without a base component in the sense of Chomsky's theory. As far as they can be compared, however, the underlying structures that I assume are no more complicated than the deep structures of Chomsky's theory, and I do not need any distinct deep structures for derived nominal complements, as Chomsky does.

One interesting consequence of the analysis of transformations that I have proposed here is that no rule which moves a noun phrase moves it to the right. All transformations acting on noun phrases are leftward movement rules.

This study, of course, can only be viewed as a preliminary one, as there remain many problems in the description of derived nominal complements, but I feel that I have shown how this construction can be handled within transformational theory, and while there may be an irreducible remainder of exceptions, it is better to capture generalizations than it is to catalog irregularities, as the Lexical Hypothesis does.

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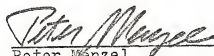ation, and the American Dialect Society.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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